

# SSAT 2011

## Time: 25 minutes

**Directions:** A company has announced that it wishes to build a large factory near your community. Discuss the advantages and disadvantages of this new influence on your community. Do you support or oppose the factory? Explain your position.

[illegible]

• 39 •

## SECTION 2

### VERBAL REASONING

Time: 20 minutes

60 Questions

**Directions:** This section is divided into two parts that contain different types of questions. As soon as you have completed Part One, answer the questions in Part Two. You may write in your test booklet. For each answer you select, fill in the corresponding circle on your answer document.

#### Part One

**Directions:** Each question in Part One is made up of a word in capital letters followed by four choices. Choose the one word that is most nearly the same in meaning as the word in capital letters.

#### Example

SWIFT; (A) clean (B) fancy (C) fast (D) quiet

#### Answer

(A) (B) (C) (D)

1. DETER;

- (A) hinder
- (B) halt
- (C) steer
- (D) sting
- (E) turn

2. HOSTILE;

- (A) indifferent
- (B) suspicious
- (C) unfriendly
- (D) doubtful
- (E) friendly

3. UTILIZE;

- (A) utilities
- (B) sing
- (C) undo
- (D) make use of
- (E) modernize

4. ABDICATE;

- (A) control
- (B) resign
- (C) explain
- (D) remorse
- (E) disprove

5. PROMINENT;

- (A) extravagant
- (B) outstanding
- (C) secret
- (D) surreptitious
- (E) disturbing

6. BOUNDARY;

- (A) limit
- (B) map
- (C) seam
- (D) hovel
- (E) ceiling

## 7. ILLITERATE:

- (A) sickly
- (B) unable to vote
- (C) unclean
- (D) unmanageable
- (E) unable to read

## 8. ORATOR:

- (A) ear
- (B) professor
- (C) poet
- (D) student
- (E) speaker

## 9. CORROBORATE:

- (A) understand
- (B) disagree
- (C) confirm
- (D) cooperate
- (E) agree

## 10. RATIFY:

- (A) assess
- (B) approve
- (C) delete
- (D) consider
- (E) examine

## 11. EXPEDITE:

- (A) hasten
- (B) hinder
- (C) block
- (D) harm
- (E) send

## 12. TURBULENT:

- (A) authentic
- (B) tamed
- (C) tranquil
- (D) violent
- (E) fatal

## 13. TENACIOUS:

- (A) divisive
- (B) timid
- (C) stranded
- (D) thin
- (E) unyielding

## 14. PERTINENT:

- (A) truthful
- (B) irreverent
- (C) prudent
- (D) irrelevant
- (E) applicable

## 15. DOGMATIC:

- (A) opinionated
- (B) bovine
- (C) traditional
- (D) canine
- (E) individualistic

## 16. UNSCRUPULOUS:

- (A) unresolved
- (B) filthy
- (C) honest
- (D) austere
- (E) unprincipled

## 17. WILY:

- (A) broken
- (B) crooked
- (C) narrow
- (D) cunning
- (E) blunt

## 18. BLATANT:

- (A) secret
- (B) shining
- (C) obvious
- (D) closed
- (E) insipid

## 19. PRETEXT:

- (A) fit
- (B) excuse
- (C) reason
- (D) doubt
- (E) preface

## 20. ACUMEN:

- (A) keenness
- (B) beauty
- (C) courtesy
- (D) poise
- (E) illness

21. RECEDE:

- (A) requite
- (B) surrender
- (C) retreat
- (D) decline
- (E) lose

22. FASTIDIOUS:

- (A) classify
- (B) precise
- (C) unkempt
- (D) sanitary
- (E) chaos

23. SURLY:

- (A) wily
- (B) anticipate
- (C) rude
- (D) strong
- (E) prodigal

24. FRUGAL:

- (A) poverty
- (B) facility
- (C) increase
- (D) careful
- (E) wealth

25. DEplete:

- (A) proceed
- (B) continue
- (C) guide
- (D) exhaust
- (E) utilize

26. FORCE:

- (A) might
- (B) soldier
- (C) military
- (D) power
- (E) requirement

27. EXTINGUISH:

- (A) poor
- (B) inactive
- (C) brief
- (D) clear
- (E) imperfect

28. THWART:

- (A) grow
- (B) love
- (C) advance
- (D) frustrate
- (E) defend

29. STIPEND:

- (A) payment
- (B) fluid
- (C) financier
- (D) plant
- (E) bank

30. REPUTABLE:

- (A) honest
- (B) star
- (C) significant
- (D) capable
- (E) fame

Part Two

**Directions:** Each question below is made up of a sentence with one or two blanks. One blank indicates that one word is missing. Two blanks indicate that two words are missing. Each sentence is followed by four choices. Select the one word or pair of words that will best complete the meaning of the sentence as a whole.

**Example**

Ann carried the box carefully so that she would not \_\_\_\_\_ the pretty glasses.

**Answer**

• (B) (C) (D)

- (A) break
- (B) fix
- (C) open
- (D) stop

When our boat first crashed into the rocks we  
were \_\_\_\_\_, but we soon felt \_\_\_\_\_ when  
we realized that nobody was hurt.

● (B) (C) (D)

- (A) afraid; relieved
- (B) happy; confused
- (C) sleepy; sad
- (D) sorry; angry

31. Dessert is to meal as \_\_\_\_\_.

- (A) ocean is to river
- (B) finale is to performance
- (C) lunch is to breakfast
- (D) fork is to spoon
- (E) plate is to table

32. Confirm is to deny as \_\_\_\_\_.

- (A) pull is to tug
- (B) contend is to imply
- (C) assert is to proclaim
- (D) simplify is to organize
- (E) accept is to reject

33. Tower is to airport as lighthouse is to \_\_\_\_\_.

- (A) jet
- (B) park
- (C) farm
- (D) shoreline
- (E) museum

34. Fidelity is to unfaithfulness as \_\_\_\_\_.

- (A) laziness is to slothfulness
- (B) loyalty is to honor
- (C) friendship is to gossip
- (D) intelligence is to unconcern
- (E) honesty is to deceit

35. Widespread is to limited as \_\_\_\_\_.

- (A) enlarged is to big
- (B) provincial is to international
- (C) encompassed is to surrounded

(D) broad is to narrow

(E) unusual is to strange

36. Saw is to carpenter as plow is to \_\_\_\_\_.

- (A) steelworker
- (B) farmer
- (C) banker
- (D) surveyor
- (E) physician

37. Sword is to fence as glove is to \_\_\_\_\_.

- (A) golf
- (B) hockey
- (C) soccer
- (D) box
- (E) baseball

38. Encourage is to demand as \_\_\_\_\_.

- (A) motivate is to undermine
- (B) insinuate is to hint
- (C) condemn is to reprimand
- (D) fire is to dismiss
- (E) suggest is to order

39. Grin is to delight as \_\_\_\_\_.

- (A) laugh is to happiness
- (B) resignation is to uncertainty
- (C) anxiety is to confusion
- (D) frown is to dismay
- (E) perspiration is to exhaustion

40. Mysterious is to understandable as \_\_\_\_\_.

- (A) skillful is to swift
- (B) obscure is to clear

- (C) clouded is to warm  
 (D) doubtful is to incredulous  
 (E) unknown is to indefinable
41. Scissors is to cut as pencil is to \_\_\_\_\_.  
 (A) read  
 (B) raze  
 (C) snip  
 (D) write  
 (E) turn
42. Pasta is to sauce as \_\_\_\_\_.  
 (A) tomato is to vine  
 (B) napkin is to plate  
 (C) cheese is to milk  
 (D) noodle is to dough  
 (E) toast is to jam
43. Bread is to crust as orange is to \_\_\_\_\_.  
 (A) pudding  
 (B) rind  
 (C) tree  
 (D) lemon  
 (E) butter
44. Team is to captain as \_\_\_\_\_.  
 (A) game to opponent  
 (B) sport is to player  
 (C) paper is to reporter  
 (D) navy is to ensign  
 (E) republic is to president
45. Olfactory is to smell as \_\_\_\_\_.  
 (A) allergic is to nose  
 (B) tactile is to touch  
 (C) sweet is to mouth  
 (D) heavy is to strength  
 (E) seasonal is to flower
46. Ruler is to measure as camera is to \_\_\_\_\_.  
 (A) photograph  
 (B) soul  
 (C) piano  
 (D) lung  
 (E) limb
47. Tiptoe is to walk as \_\_\_\_\_.  
 (A) rasp is to throat  
 (B) press is to wrinkle  
 (C) whisper is to speech  
 (D) dance is to rhythm  
 (E) tumble is to tree
48. Kernel is to central as trivia is to \_\_\_\_\_.  
 (A) productive  
 (B) controversial  
 (C) unimportant  
 (D) unleavened  
 (E) harvested
49. Fib is to liar as \_\_\_\_\_.  
 (A) campaign is to politician  
 (B) perform is to crew  
 (C) tally is to banker  
 (D) convict is to attorney  
 (E) flatter is to toady
50. Nap is to sleep as snack is to \_\_\_\_\_.  
 (A) part  
 (B) age  
 (C) rest  
 (D) meal  
 (E) biscuit
51. Building is to foundation as plant is to \_\_\_\_\_.  
 (A) primer  
 (C) floor  
 (B) root  
 (D) grotto  
 (E) pane
52. Nose is to olfactory as ear is to \_\_\_\_\_.  
 (A) allergic  
 (B) beautiful  
 (C) edible  
 (D) auditory  
 (E) raspy
53. Irrk is to soothing as support is to \_\_\_\_\_.  
 (A) elevating  
 (B) undermining  
 (C) irritating  
 (D) vilifying  
 (E) conciliating
54. Illegible is to read as \_\_\_\_\_.  
 (A) irreparable is to break  
 (B) broken is to fix

- (C) illegal is to act  
(D) intense is to strain  
(E) invisible is to see
55. Tact is to diplomat as \_\_\_\_\_.  
(A) training is to physician  
(B) bias is to judge  
(C) parsimony is to philanthropist  
(D) agility is to gymnast  
(E) vulnerability is to victim
56. Ravenous is to hunger as \_\_\_\_\_.  
(A) agitated is to placidity  
(B) concerned is to apathy  
(C) smart is to tenacity  
(D) furious is to indignation  
(E) pliable is to obstinacy
57. Amplify is to sound as bolster is to \_\_\_\_\_.  
(A) courage  
(B) silence  
(C) smell  
(D) insomnia  
(E) light
58. Auditorium is to lecture as \_\_\_\_\_.  
(A) attic is to storage  
(B) temple is to religion  
(C) target is to arrow  
(D) theater is to concert  
(E) cafeteria is to food
59. Philanthropic is to benevolence as \_\_\_\_\_.  
(A) devout is to malice  
(B) realistic is to plan  
(C) smooth is to surface  
(D) ostentatious is to reserve  
(E) miserly is to stinginess
60. Spurious is to authenticity as \_\_\_\_\_.  
(A) abject is to subjectivity  
(B) affluent is to character  
(C) laughable is to seriousness  
(D) totalitarian is to completeness  
(E) lavish is to expense

GO ON TO THE NEXT SECTION





## SECTION 3

### QUANTITATIVE REASONING

Time: 35 minutes

25 Questions

**Directions:** Any figures that accompany questions in this section may be assumed to be drawn as accurately as possible EXCEPT when it is stated that a particular figure is not drawn to scale. Letters such as  $x$ ,  $y$  and  $n$  stand for real numbers.

Each question consists of a word problem followed by four answer choices. You may write in your test booklet; however, you may be able to solve many of these problems in your head. Next take a look at the four answer choices and select the best one.

**Example**

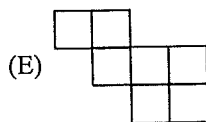
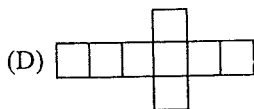
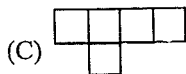
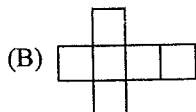
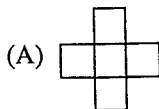
If  $3 + x = 5$ , what is the value of  $x$ ?

(A) 0 (B) 1 (C) 2 (D) 3

**Answer**

(A) (B) (C) (D)

1. Which of the following shapes can be folded to create a cube with no overlapping flaps?



2. Of the following, 25 percent of \$20.05 is closest to \_\_\_\_\_.
- (A) \$1.95  
(B) \$2  
(C) \$4

- (D) \$5  
(E) \$20

3. Dividing 63 by 5 leaves a remainder of \_\_\_\_\_.

- (A) 18  
(B) 5  
(C) 4  
(D) 3  
(E) 2

4. If  $7,500 + \square - 500 = 9,500$ , then  $\square =$  \_\_\_\_\_.

- (A) 200  
(B) 300  
(C) 2,000  
(D) 2,500  
(E) 3,000

5. The width of a rectangle is one-third of its length. If the length is 9, what is its perimeter?

- (A) 3  
(B) 4  
(C) 16

- (D) 24  
(E) 32
6. What is the value of  $a$  in Figure 1?
- (A) 30  
(B) 60  
(C) 90  
(D) 120  
(E) It cannot be determined from the information given.
7. Of the following, which number is the greatest?
- (A) 0.08  
(B) 0.7899  
(C) 0.7923  
(D) 0.792  
(E) 0.79
8. "When 6 is added to three times a number  $N$ , the result is 48." Which of the following equations represents this statement?
- (A)  $6N + 3 = 48$   
(B)  $48 + 6N = 3$   
(C)  $48N + 3 = 6$   
(D)  $3N + 6 = 48$   
(E)  $48 - 6N = 3$
9. If  $N + 7$  is an odd, whole number, then  $N$  could be which of the following?
- (A) 7  
(B) 5  
(C)  $\frac{1}{2}$   
(D) 0  
(E) -7
10. A bull is tied to a seven-foot leash in the center of a square pen, as shown in Figure 2. If a side of the pen is 14 feet in length, which figure best shows the shape and size of the area in which the bull can move?

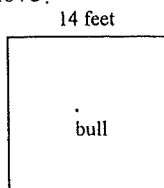


Figure 2

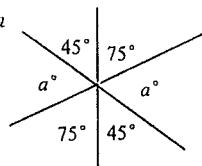

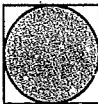

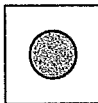
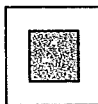
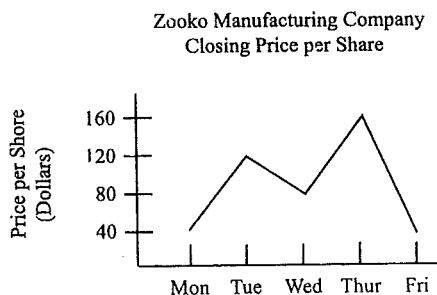


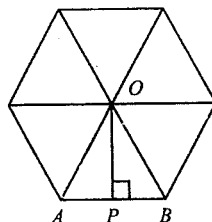
Figure 1

- (A) 
- (B) 
- (C) 
- (D) 
- (E) 
11. If a harvest yields 60 bushels of corn, 100 bushels of wheat, and 80 bushels of soybeans, what percent of the total harvest is corn?
- (A) 25 %  
(B) 30 %  
(C) 33 %  
(D) 40 %  
(E) 50 %
12. Which of the following is a multiple of 4?
- (A) 1  
(B) 2  
(C) 3  
(D) 6  
(E) 8
13. A 3-foot, 2-inch board is how many times bigger than a 2-foot board?
- (A) 1.5  
(B) 1.6  
(C) 1.7  
(D)  $\frac{19}{12}$   
(E)  $\frac{17}{12}$
14. What is the distance between  $(-10, -13)$  and  $(-16, -9)$  along the line connecting them?

- (B) 10  
(C)  $2\sqrt{13}$   
(D)  $4\sqrt{13}$   
(E) 13
15. What is the perimeter of a regular pentagon whose sides measure four units?  
(A) 7.5  
(B) 9  
(C) 12  
(D) 15  
(E) 20
16. What is 60 expressed as the product of its prime factors?  
(A)  $(15)(6)$   
(B)  $(5)(12)$   
(C)  $(5)(3)(3)(2)$   
(D)  $(4)(5)(3)$   
(E)  $(2)(5)(3)(2)$
17. Mike bought 10 shares of Zooko stock at the closing price on Tuesday and sold them at the closing price on Friday. How much money did Mike lose on his investment?

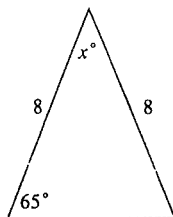


- (A) \$ 80  
(B) \$ 200  
(C) \$ 800  
(D) \$ 2,000  
(E) \$ 95
18. The hypotenuse of a right triangle is 5 and one leg is 3. Find the length of the other leg of the triangle.  
(A) 16  
(B) 10  
(C) 8  
(D) 12  
(E) 4
19. Calculate the area of the hexagon.  $OP = 2\sqrt{3}$ ,  $AB = 4$ .



- (A)  $96\sqrt{3}$   
(B)  $32\sqrt{3}$   
(C) 32  
(D)  $24\sqrt{3}$   
(E) 24
20. If  $|4a - 3| = 5$ , which of the following is a possible value for  $a$ ?  
(A) -2  
(B) -1  
(C) 0  
(D) 1  
(E) 2
21. If a class of 6 students has an average grade of 83 before a seventh student joins, what must the seventh student get as a grade in order to raise the class average to 85?  
(A) 80  
(B) 84  
(C) 88  
(D) 95  
(E) 97
22. If 6 is a factor of a certain number, what must also be factors of that number?  
(A) 1, 2, 3, and 6  
(B) 2 and 3 only  
(C) 6 only  
(D) 2 and 6 only  
(E) 1, 2, and 3

23.

 $x =$  \_\_\_\_\_.

- (A) 8
- (B) 30
- (C) 50
- (D) 65
- (E) 70

24. For what priced item does 20% off equal a \$ 8.00 discount?

- (A) \$ 5.00
- (B) \$ 4.00
- (C) \$ 10.00

(D) \$ 80.00

(E) \$ 40.00

25. On Monday, Gerri ate  $\frac{1}{8}$  of an apple pie. On Tuesday, she ate  $\frac{1}{4}$  of what was left of the pie. What fraction of the entire pie did Gerri eat on both days?

- (A)  $\frac{1}{4}$
- (B)  $\frac{1}{2}$
- (C)  $\frac{5}{8}$
- (D)  $\frac{7}{8}$
- (E)  $\frac{11}{32}$

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3. The disappearance of certain animals from western Europe was \_\_\_\_\_.  
(A) the immediate result of a more advanced culture  
(B) the direct result of humans' equipment  
(C) caused mostly by human hunting  
(D) a result of changes in climate  
(E) disastrous to primitive humans
4. The writer apparently believes that a society's future course may be determined by \_\_\_\_\_.  
(A) adapting to changes  
(B) the ambitions of the people  
(C) cultural enrichment  
(D) the clothing worn  
(E) economic abundance
5. In the passage's last sentence, the word "coat" means \_\_\_\_\_.  
(A) something different each time it is used  
(B) the same thing both times it is used  
(C) different things to different readers  
(D) a thick layer of fur or hair  
(E) to cover with a substance

**Passage 2**

- With Union troops in the South and an increasing number of federal officials, most of whom were loyal Republicans, the latter sought to build up a strong Southern wing of their party. Many Freedmen's Bureau officials were interested not only in the welfare of the freedman but in the growth of the Republican party as well. Moreover, missionary groups and teachers from the North, who saw in the Republican party an instrument by which the South could be saved from barbarism, supported it enthusiastically. It would be incorrect, however, to conclude that these groups were primarily political in their motives or activities. But the special agency that recruited Republicans, primarily among blacks, was the Union League.
- (5) The Union League of America was organized in the North during the war. It did an effective job in rallying support for the war wherever there was much opposition. Later it branched out into the South to protect the fruits of Northern victory. As a protective and benevolent society, it welcomed black members and catechized them on political activity. As the Freedmen's Bureau and other Northern agencies grew in the South, the
- (10) Union League became powerful attracting a large number of blacks. With the establishment of Radical Reconstruction, the league became the spearhead for Southern Republicanism. Since black males were the most numerous enfranchised group in many areas, the league depended on them for the bulk of Republican strength. Black women also played a role in "getting out the vote" and in shaping political decisions in their
- (15) communities. In October 1867 a reporter for the *New York Times* noted the presence

- of black women in the audience at local Republican and state constitutional conventions. He and other observers were impressed that, in contrast to white women who were quiet spectators at political meetings, black women shouted from the balconies, forcing their voices into the debates. As Elsa Barkley Brown has pointed out: "African-American women in Virginia, Mississippi, South Carolina and elsewhere understood themselves to have a vital stake in African-American men's franchise". The fact that only men could exercise the franchise did not at all mean that women were not involved.

- By the fall of 1867 chapters of the league were all over the South. South Carolina alone had eighty-eight, and it was said that almost every black in the state was enrolled. Ritual, secrecy, night meetings, and an avowed devotion to freedom and equal rights made the league especially attractive to blacks. At elections they looked to their chapters for guidance of voting. If they had any doubt about the straight Republican ticket, the league had only to remind them that this was the party of Abraham Lincoln and of deliverance. A vote for Democrats, they said, was a vote for the return of slavery. During most of Reconstruction, the Union League and such smaller organizations as the Lincoln Brotherhood and the Red Strings delivered the black vote to the Republican party in national as well as state and local elections.

6. In line 13, "catechized them" most nearly means \_\_\_\_\_.  
 (A) advised  
 (B) pledged to secrecy  
 (C) administered an oath of loyalty  
 (D) warned  
 (E) instructed in important basic principles
7. In line 27, "exercise the franchise" most nearly means \_\_\_\_\_.  
 (A) run for government office  
 (B) be members of the Republican party  
 (C) vote to elect government officials  
 (D) participate in political activities  
 (E) take an oath to become full-fledged American citizens
8. The Union League of America depended on black males to strengthen the Republican Party in the South during the Radical Reconstruction period because \_\_\_\_\_.  
 (A) in many areas they were the only people who could read and write  
 (B) in many areas they were the largest group of people who could vote  
 (C) the leaders of the Union League of America were male chauvinists  
 (D) they had a history of supporting the Republican Party  
 (E) black women generally did not support Republican candidates for office
9. The passage states that all of the following wanted to build up the Republican party in the South EXCEPT \_\_\_\_\_.  
 (A) missionary groups and teachers from the North  
 (B) many officials of the Freedman's Bureau

- (C) the Union League of America
  - (D) many Union troops in the South
  - (E) many Federal officials in the South
10. According to the information in the passage, all of the following are true about the Union League of America EXCEPT \_\_\_\_\_.
- (A) it did not exist before the war
  - (B) it was organized in the North
  - (C) it worked to increase support for the war
  - (D) it attracted many blacks as members
  - (E) it was the only organization organizing black support for the Republican party during Reconstruction

### Passage 3

- The periodical cicadas, most notably *Magicicada septendecim*, have the longest life cycle of any insect. Their unique life cycle begins underground, where the nymphs patiently suck the juice from the roots of trees. Then, after 17 years of waiting, the adult cicadas emerge from the ground, swarm in vast numbers, and temporarily swamp the landscape. Within a few weeks they mate, lay their eggs, and die.
- (5)

The question that puzzled biologists was, Why is the cicada's life cycle so long? And is there any significance to the life cycle being a prime number of years? Another species, *Magicicada tredecim*, swarms every 13 years, implying that life cycles lasting a prime number of years offer some evolutionary advantage.

- (10) One theory suggests that the cicada has a parasite that also goes through a lengthy life cycle and that the cicada is trying to avoid. If the parasite has a life cycle of, say, 2 years then the cicada wants to avoid a life cycle that is divisible by 2, otherwise the parasite and the cicada will regularly coincide. Similarly, if the parasite has a life cycle of 3 years then the cicada wants to avoid a life cycle that is divisible by 3, otherwise the
- (15) parasite and the cicada will once again regularly coincide. Ultimately, to avoid meeting its parasite, the cicadas' best strategy is to have a long life cycle lasting a prime number of years. Because nothing will divide into 17, *Magicicada septendecim* will rarely meet its parasite. If the parasite has a 2-year life cycle they will meet only every 34 years, and if it has a longer life cycle, say 16 years, then they will meet only every 272 ( $16 \times$
- (20) 17) years.

- In order to fight back, the parasite has only two life cycles that will increase the frequency of coincidences—the annual cycle and the same 17-year cycle as the cicada. However, the parasite is unlikely to survive reappearing 17 years in a row, because for the first 16 appearances there will be no cicadas for it to parasitize. On the other hand,
- (25) in order to reach the 17-year life cycle, the generations of parasites would first have to

evolve through the 16-year life cycle. This would mean at some stage of evolution the parasite and cicada would not coincide for 272 years! In either case the cicada's long prime life cycle protects it.

This might explain why the alleged parasite has never been found! In the race to  
(30) keep up with the cicada, the parasite probably kept extending its life cycle until it hit the 16-year hurdle. Then it failed to coincide for 272 years, by which time the lack of coinciding with cicadas had driven it to extinction. The result is a cicada with a 17-year life cycle, which it no longer needs because its parasite no longer exists.

11. Scientists theorize that cicadas have a 17-year life cycle because \_\_\_\_\_.  
(A) 17 years is the optimum length of time for cicadas to most efficiently use available food and other resources in order to reproduce  
(B) no parasite species can survive 17 years without reproducing  
(C) it evolved as the most advantageous way for cicadas to co-exist with a parasite that has now become extinct  
(D) it evolved as a successful defense against a parasite that no longer exists  
(E) all insects have a life cycle lasting a number of years that is some randomly selected prime number
12. *Magicicada tredecim* probably has a 13-year life cycle rather than a 17-year one because \_\_\_\_\_.  
(A) it is a less advanced species than *Magicicada septendecim*  
(B) two species of cicada having the same life cycle would create unnecessary competition for both species, so one evolved a different long prime number life cycle  
(C) its parasite is still extant, so it cannot evolve a life cycle lasting so long  
(D) its parasite became extinct so it had no need to evolve a life cycle lasting a longer prime number of years  
(E) it has a parasite with a 16-year life cycle, which means that it will meet its parasite only once every 208 ( $16 \times 13$ ) years
13. According to the theory described in the passage, which of the following statements is NOT true?  
(A) The cicada wants to decrease the frequency with which its life cycle coincides with its parasite.  
(B) The cicada's parasite wants to increase the frequency with which its life cycle coincides with that of the cicadas.  
(C) For the cicada's parasite, the longer the life cycle of the cicadas the better.  
(D) To avoid meeting its parasite it is advantageous for the cicada to have a long life cycle.  
(E) To avoid meeting its parasite it is advantageous for cicadas to have a life cycle lasting a prime number of years.
14. Which of the following most accurately describes the explanation given in the passage for the fact that *Magicicada septendecim* has a 17-year life cycle?  
(A) It is based on a scientific theory that has excellent theoretical and empirical support.  
(B) It is based entirely on conjecture.



- (C) It is based on a scientific theory that has good theoretical support but no real empirical support.
- (D) It is a mathematician's tongue-in-cheek attempt to offer a mathematical explanation for a biological phenomenon that cannot be mathematically explained.
- (E) It is based on a theory with excellent empirical support but almost no theoretical support.
15. If an organism is discovered that parasitizes *Magieicadu septendecim* it would \_\_\_\_\_.
- (A) totally invalidate the theory that *Magieicada septendecim* evolved a long life cycle lasting a prime number of years to protect itself from a parasite
- (B) demonstrate conclusively that *Magieicada Septendecim* evolved a long life cycle lasting a prime number of years in order to protect itself from a parasite
- (C) suggest that the theory that *Magieicada septendecim* evolved a long life cycle lasting a prime number of years to protect itself from a parasite is probably not true
- (D) show conclusively that certain parasites can survive 272 years without a host to parasitize
- (E) suggest that parasites have evolved at a faster rate than cicadas

#### Passage 4

A single flower he sent me, since we met. All tenderly his messenger he chose;  
Deep-hearted, pure, with scented dew still wet—One perfect rose.

I knew the language of the floweret; "My fragile leaves," it said, "his heart  
enclose." Love long has taken for his amulet.

- (5) One perfect rose  
Why is it no one ever sent me yet?  
One perfect limousine, do you suppose?  
Ah no, it's always just my luck to get.  
One perfect rose.
16. What is the tone of the first two stanzas?
- (A) Ironic (B) Angry (C) Irritated  
(D) Serious (E) Sarcastic
17. Which word changes the meaning of the poem?
- (A) Scented (line 2). (B) Limousine (line 7). (C) Floweret (line 3).  
(D) Tenderly (line 1). (E) Language (line 3).
18. The first two lines of stanza two use which of the following literary devices?
- (A) Realism (B) Hyperbole (C) Alliteration  
(D) Personification (E) Dialect
19. The best meaning for "scented" is \_\_\_\_\_.
- (A) pure  
(B) rose colored  
(C) attractive to touch

- (D) wet  
(E) attractive to the sense of smell
20. What event is being described in the poem?
- (A) A mixed reaction to a gift.  
(B) A tale of miscommunication.  
(C) A tale of a flower-delivery service.  
(D) A dream.  
(E) The story of all love affairs.

**Passage 5**

Thomas, Chess, and Checkers stayed quiet for a long time. After a while, Chess and Checkers started to sing a Flathead song of mourning. *For a wake, for a wake.* Samuel was still alive, but Thomas sang along without hesitation. That mourning song was B-7 on every reservation jukebox.

- (5) After the song, Thomas stood and walked away from the table where his father lay flat as a paper plate. He walked outside and cried. Not because he needed to be alone; not because he was afraid to cry in front of women. He just wanted his tears to be individual, not tribal. Those tribal tears collected and fermented in huge BIA [Bureau of Indian Affairs] barrels. Then the BIA poured those tears into beer and Pepsi cans and
- (10) distributed them back onto the reservation. Thomas wanted his tears to be selfish and fresh.

"Hello," he said to the night sky. He wanted to say the first word of a prayer or a joke. A prayer or a joke often sound alike on the reservation.

- "Help," he said to the ground. He knew the words to a million songs: Indian,
- (15) European, African, Mexican, Asian. He sang "Stairway to Heaven" in four different languages but never knew where that staircase stood. He sang the same Indian songs continually but never sang them correctly. He wanted to make his guitar sound like a waterfall, like a spear striking salmon, but his guitar only sounded like a guitar. He wanted the songs, the stories, to save everybody.

21. Thomas, Chess, and Checkers are \_\_\_\_\_.  
(A) Mexican                      (B) European                      (C) Asian  
(D) African                      (E) Native American
22. In line 2, *a wake* means \_\_\_\_\_.  
(A) the turbulence left behind by something moving through water  
(B) no longer asleep  
(C) a viewing of a dead person before burial  
(D) aftermath  
(E) celebration

23. The fact that Thomas, Chess, and Checkers sing a song of mourning while Samuel is still alive suggests that \_\_\_\_\_.  
 (A) Samuel is afraid to die  
 (B) Samuel doesn't belong on the reservation  
 (C) Samuel's life is tragic  
 (D) they believe the song has healing powers  
 (E) Samuel is a ghost
24. Thomas wants his tears to be "selfish and fresh" (lines 10-11) because \_\_\_\_\_.  
 (A) it is difficult for him to share his feelings with others  
 (B) he wants to mourn his father as an individual, not just as another dying Indian  
 (C) he feels guilty mourning his father before his father has died  
 (D) he doesn't think the tribe will mourn his father's passing  
 (E) tribal tears were meaningless
25. The sentence "Then the BIA poured those tears into beer and Pepsi cans and distributed them back onto the reservation" (lines 9-10) is an example of \_\_\_\_\_.  
 (A) a paradox (B) dramatic irony (C) onomatopoeia  
 (D) flashback (E) figurative language
26. In line 14, Thomas asks for help because \_\_\_\_\_.  
 (A) he can't stop crying  
 (B) he wants to be a better guitar player  
 (C) he wants to be able to rescue people with his music  
 (D) he can't remember the words to the song  
 (E) no one wants to listen to him play

### Passage 6

An excerpt from a Dead Sea Scroll describing Abraham's *sojourn* in Egypt and the beauty of Sarah, his wife, was recently made public for the first time. The 2,000-year-old scroll, badly preserved and extremely brittle, is the last of seven scrolls found in 1947 in the caves of the Judean desert south of Jericho. Scholars say that this scroll

(5) enlarges on the hitherto known Biblical tales of Lamech, Enoch, Noah, and Abraham.

This document of Hebrew University yielded *decipherable* contents only after months of exposure to controlled humidity. The centuries had compressed the leather scroll into a brittle, glued-together mass. After it had been rendered flexible, the scroll was folded into pages. Four complete pages, each with 34 lines of writing, resulted.

- (10) Besides this, scholars had for their studies large sections of the decipherable writing on five other pages, and readable lines and words on additional pages. Scholars were delighted, for they had almost despaired of recovering the scroll as a readable document. The work of giving new life to the desiccated parchment and of unrolling it was done by an old German expert on ancient materials, under the supervision of two
- (15) Israeli scholars.

27. The word *sojourn* means \_\_\_\_\_.  
(A) stay (B) congruent (C) flight  
(D) difficulties (E) servitude
28. *Decipherable* as used in the second paragraph means \_\_\_\_\_.  
(A) durable (B) intelligible (C) practical  
(D) exciting (E) scholarly
29. The scroll \_\_\_\_\_.  
(A) gives new details about people already known of  
(B) is limited to an account of Abraham and Sarah  
(C) was found in Egypt  
(D) is the first of seven found in 1947  
(E) tells of Abraham's life in the Judean desert
30. The scroll \_\_\_\_\_.  
(A) is in Germany  
(B) was deciphered by a German specialist  
(C) was beautifully preserved  
(D) belongs to an Israeli university  
(E) was taken to Jericho
31. The writing on the scroll \_\_\_\_\_.  
(A) was legible on only four pages  
(B) could be read on several pages  
(C) was too damaged by age to be deciphered  
(D) was irreparable  
(E) was finally legible throughout the document

**Passage 7**

Thousands of species of birds exist today, and nearly every species has its own special courtship procedures and "identification checks". Identification checks are important, because if birds of different species mate, any offspring will usually be sterile or badly adapted to their surroundings.

- (5) Plumage often plays a key role in both identification and courtship. In breeding season, male birds often acquire distinctive plumage which they use to attract females who will, in turn, only respond to males with the correct markings. In some species, the females are more brightly colored, and the courtship roles are reversed. Distinctive behavioral changes can also be important aspects of courtship and breeding activity.
- (10) Aggressiveness between males, and sometimes between females, is quite common. Some birds, like whooping cranes and trumpeter swans, perform wonderfully elaborate courtship dances in which both sexes are enthusiastic participants.

Bird sounds are often a very central part of identification and courtship behavior between individuals in a given species. When a female migrates in the spring to her

- (15) breeding region, she often encounters numerous birds of different species. By its singing, the male of a species both identifies itself and communicates to females of that species that it is in breeding condition. This information allows a female to predict a male's response to her approach. Later, after mating has taken place, the note patterns of a particular male's song enable a nesting female to continue to identify her own partner.
32. The author implies that a bird engages in identification and courtship procedures mainly in order to \_\_\_\_\_.  
(A) try to dominate the bird population of a given area  
(B) find a better nesting spot  
(C) find the most colorful partner it can  
(D) attract a mate of its own species  
(E) increase its control over its nesting partner
33. According to the passage, a feature of the male song bird is its ability to \_\_\_\_\_.  
I . attract a female of its own species  
II . intimidate rival males  
III . communicate its identity to its mate  
(A) I only  
(B) III only  
(C) I and II only  
(D) I and III only  
(E) I , II and III
34. The author uses the whooping crane as an example of a bird that \_\_\_\_\_.  
(A) acquires a distinctive breeding plumage  
(B) reverses the normal male and female courtship roles  
(C) displays unusual aggressiveness while courting  
(D) seldom participates in courtship procedures  
(E) behaves in an unusual and noteworthy way during courtship
35. According to the passage, matings between birds of different species \_\_\_\_\_.  
(A) may help to establish a permanent new species  
(B) are quite common  
(C) have never happened  
(D) produce more sturdy offspring  
(E) do not usually result in healthy offspring

**Passage 8**

Live thy Life,  
Young and old,  
Like yon oak,  
Bright in spring,

- (5) Living gold;  
Summer-rich,  
Then and then,  
Autumn-changed,  
Soberer-hued,  
(10) Gold again.  
All his leaves,  
Fall'n at length,  
Look, he stands,  
Trunk and bough,  
(15) Naked strength.  
"The Oak" by Alfred Lord Tennyson.

36. In this poem, the seasons represent different \_\_\_\_\_.  
(A) periods of history      (B) kinds of trees      (C) times of day  
(D) stages of life      (E) styles of dress
37. The "he" mentioned in line 13 refers to \_\_\_\_\_.  
(A) autumn      (B) the oak      (C) life  
(D) the reader      (E) the poet
38. What does "Gold again" in line 10 signify?  
(A) The richness of summer.  
(B) The color of oak trees.  
(C) The revival of the past.  
(D) The arrival of autumn.  
(E) The increased wealth of the narrator.
39. During which season is the oak referred to as "Living gold"?  
(A) Autumn.  
(B) Spring.  
(C) This description does not refer to a season.  
(D) Summer.  
(E) Winter.
40. With which of the following statements about life would the speaker be most likely to agree?  
(A) It is important to try to accomplish something during one's lifetime.  
(B) Life is too short to spend time doing unpleasant things.  
(C) The seasons are unpredictable.  
(D) Trees are an integral part of the enjoyment of life.  
(E) People should live every period of their lives to the fullest.

## SECTION 5

### MATHEMATICS ACHIEVEMENT

Time: 40 minutes

20 Questions

**Directions:** Each question is followed by four suggested answers. Read each question and then decide which one of the four suggested answers is best.

Find the row of spaces on your answer document that has the same number as the question. In this row, mark the space having the same letter as the answer you have chosen. You may write in your test booklet.

#### Example

$$(5 + 3) - 2 =$$

(A) 6

(B) 8

(C) 10

(D) 13

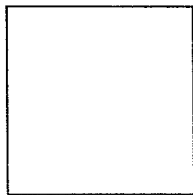
#### Answer

☒ (A) ☐ (B) ☐ (C) ☐ (D)

The correct answer to this question is lettered A, so space A is marked.

1. Bob is  $x$  years old and Jerry is 5 years older. In terms of  $x$ , what was the sum of their ages, in years, 4 years ago?
  - (A)  $2x + 3$
  - (B)  $2x + 2$
  - (C)  $2x - 3$
  - (D)  $x - 3$
  - (E)  $x - 10$
2. A game show contestant answered exactly 20 percent of the questions correctly. Of the first 15 questions, he answered 4 correctly. If he answered only one of the remaining questions correctly, which of the following must be true?
  - I . There were a total of 20 questions.
  - II . He answered 10 percent of the remaining questions correctly.
  - III . He didn't answer 9 of the remaining questions correctly.
3. If  $C$  is the product of consecutive integers  $A$  and  $B$ , then  $C$  must be \_\_\_\_\_.
  - (A) greater than  $A + B$
  - (B) a negative integer
  - (C) a positive integer
  - (D) an even integer
  - (E) an odd integer
4. A 40 percent discount is offered on all sweaters at Store S. If a cotton sweater is on sale for \$54.00 and a wool sweater is on sale for \$72.00, what was the difference in price of the sweaters before the discount?
  - (A) \$16.00
  - (B) \$19.20

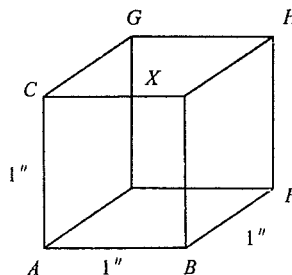
- (C) \$ 20.00  
(D) \$ 24.00  
(E) \$ 30.00
5. The maximum load that a railway car can carry is 18 tons of freight. If a train has 40 railway cars, and each of these carries  $\frac{5}{9}$  of a ton less than its maximum load, how many tons of freight is the train carrying?  
(A) 604  
(B)  $697\frac{7}{9}$   
(C)  $640\frac{5}{9}$   
(D) 648  
(E) 660
6. In 2 hours, the minute hand of a clock rotates through an angle of \_\_\_\_\_.  
(A)  $60^\circ$   
(B)  $90^\circ$   
(C)  $180^\circ$   
(D)  $360^\circ$   
(E)  $720^\circ$
7. Which of the following fractions is not more than one third?  
(A)  $\frac{22}{63}$   
(B)  $\frac{4}{11}$   
(C)  $\frac{15}{46}$   
(D)  $\frac{33}{98}$   
(E)  $\frac{102}{303}$
- 8.



The length of each side of the square above is  $\frac{2x+1}{3}$ . The perimeter of the square is \_\_\_\_\_.

- (A)  $\frac{8x}{3} + 4$   
(B)  $\frac{8x+4}{3}$   
(C)  $\frac{2x}{3} + 4$   
(D)  $\frac{2x}{3} + 16$   
(E)  $\frac{4x}{3} + 2$

9.



The diagram shows a cube.

The distance from A to X is \_\_\_\_\_.

- (A) 2 inches  
(B)  $\sqrt{3}$  inches  
(C)  $\sqrt{2}$  inches  
(D) 1 inch  
(E)  $\frac{1}{\sqrt{2}}$  inch
10. A motorist travels 180 miles to his destination at an average speed of 60 miles per hour and returns to the starting point at an average speed of 90 miles per hour. His average speed for the entire trip is \_\_\_\_\_.  
(A) 72 miles per hour  
(B) 52 miles per hour  
(C) 50 miles per hour  
(D) 48 miles per hour  
(E) 45 miles per hour



11. A snapshot measures  $1\frac{1}{4}$  inches by  $2\frac{3}{8}$  inches. It is to be enlarged so that the longer dimension will be 4 inches. The length of the enlarged shorter dimension will be \_\_\_\_\_.

(A)  $2\frac{1}{2}$  inches  
 (B)  $2\frac{5}{8}$  inches  
 (C) 3 inches  
 (D)  $3\frac{3}{8}$  inches  
 (E)  $7\frac{3}{5}$  inches

12. From a piece of tin in the shape of a square 6 inches on a side, the largest possible circle is cut out. Of the following, the ratio of the area of the circle to the area of the original square is closest in value to \_\_\_\_\_.

(A)  $\frac{4}{5}$   
 (B)  $\frac{2}{3}$   
 (C)  $\frac{3}{5}$   
 (D)  $\frac{7}{9}$   
 (E)  $\frac{3}{4}$

13. If the outer diameter of a metal pipe is 3.01 inches and the inner diameter is 2.21 inches, the thickness of the metal is \_\_\_\_\_.

(A) 0.40 in  
 (B) 0.90 in  
 (C) 1.42 in  
 (D) 1.94 in  
 (E) 2.39 in

14. A sportswriter claims that her football predictions are accurate 40% of the time. During football season, a fan kept records and found that the writer was inaccurate for a total of 30 games,

although she did maintain her 40% accuracy. For how many games was the sportswriter accurate?

(A) 5  
 (B) 15  
 (C) 20  
 (D) 40  
 (E) 60

15. In a certain boys' camp, 40% of the boys are from New York State and 10% of these are from New York City. What percent of the boys in the camp are from New York City?

(A) 60%  
 (B) 50%  
 (C) 33%  
 (D) 10%  
 (E) 4%

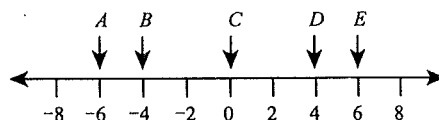
16. 55 is to \_\_\_\_\_ as 110 is to 0.55.

(A) 0.275  
 (B) 0.900  
 (C) 4.50  
 (D) 9.00  
 (E) 22.5

17. If  $n = \sqrt{30}$ , then \_\_\_\_\_.

(A)  $\sqrt{5} > n > \sqrt{3}$   
 (B)  $3 > n > 2$   
 (C)  $n = 4.5$   
 (D)  $5 < n < 6$   
 (E)  $n > 5$

18.



How would you move along the number line above to find the difference between 4 and -4?

(A) From E to B.  
 (B) From A to D.  
 (C) From B to D.  
 (D) From D to A.  
 (E) From B to E.

19. How many sixths are there in  $\frac{3}{5}$ ?

(A)  $2\frac{3}{8}$

(B)  $3\frac{3}{5}$

(C)  $4\frac{4}{5}$

(D)  $5\frac{1}{5}$

(E) 6

20. Four games drew an average of 34,800 people per game. If the attendance at the first three games was 32,500, 35,000 and 38,000, how many people attended the fourth game?

(A) 33,700

(B) 37,000

(C) 39,000

(D) 40,500

(E) 43,000

## SECTION 1: WRITING THE ESSAY

I agree with the idea of building a large factory near my community. I list my reasons as follows:

Firstly, a new factory near our community helps to improve living standard of people in our community. The factory will employ a lot of workers. As a consequence, the unemployment rate will drop significantly. Many people in our community will find a job in the factory. As people's income increases, they will be able to spend more money on their food, clothing and leisure time, and the quality of life will be increased.

Secondly, a new factory will bring prosperity to our community. The taxes collected from the factory will be an essential source of revenue for our community. The community will have more money to spend on infrastructure, education and communication. These developments will not only increase the standard of living of the town, but could in turn attract more businesses.

Some people may say that the factory would bring noise or pollution concerns. However, with modern technology, air and noise pollution can be kept to a minimum. Others may worry that new comers attracted by the factory will change the social structure of this community and affect the traditional life here. The newcomers may strain the social services of the town, overcrowding the schools and the hospitals. Even this, though, can be prepared for, and these effects mitigated.

Of course, there are drawbacks in building a factory. However, if we take the proper precautions, such as imposing strict environmental standards and providing adequate social services for potential migrants, the potential benefit of opening a new factory should outweigh the risks.

## SECTION 2: VERBAL REASONING

1. A  
To deter is to discourage a person or group from doing something. Fear of retaliation may deter our enemies from attacking.
2. C  
Hostile means antagonistic or unfriendly. It is the nature of cats to be hostile to dogs.
3. D  
To utilize is to make practical use of. You can utilize the microwave for quick defrosting.
4. B  
To abdicate is to give up formally or to resign. King Edward abdicated from the English throne to marry a divorced woman.
5. A  
Prominent means sticking out, noticeable, or outstanding. Jimmy Durante had a prominent nose.
6. A  
A boundary is a border. Mexico shares a boundary with the state of Texas.
7. E  
Illiterate means unable to read. One who is literate is educated and is able to read.

The prefix il-creates the negative. Many of the homeless are unemployable because they are illiterate.

8. E

An orator is one who speaks. (Can you see the root oral?) The keynote speaker at the convention was a superb orator.

9. C

To corroborate is to strengthen, to support, or to confirm. The bloody knife served to corroborate the eyewitness's testimony.

10. B

To ratify is to give official sanction to or to approve. If three more states ratify the proposed amendment, it will become a part of our Constitution.

11. A

To expedite is to speed up the action or to send quickly. The Latin derivation of this word is "to free one caught by the feet". You can expedite the delivery of mail by using ZIP Code plus four.

12. D

Turbulent means unruly or agitated. As the airplane passed through turbulent air we all felt rather queasy.

13. E

Tenacious means holding on tightly or persistent. The tenacious salesman calls twice a week between 5 and 7 p.m.

14. E

Pertinent means relevant. Testimony is admitted in court only if it is pertinent to the charges in the case.

15. A

Dogmatic means dictatorial or opinionated. The word has to do with doctrine or dogma, not with dogs. My uncle is so dogmatic that he refuses to even listen to my point of view.

16. E

One who is unscrupulous is not restrained by ideas of right and wrong. The

unscrupulous stockbroker used inside information to sell before the stock price plummeted.

17. D

Wily means crafty or sly. The wily wolf outwitted Red Riding Hood.

18. C

Blatant means loud and obtrusive. The misspelling in the address was a blatant error in an otherwise excellent letter.

19. B

A pretext is a false reason or an excuse. Illness was his pretext for absence from school; actually he went to the beach.

20. A

Acumen is keenness and quickness in understanding and dealing with a situation. Acumen with respect to foreign cultures is a great asset in the diplomatic corps.

21. C

To recede is to pull back or move backward. House and trees seem to recede as we ride past in a train.

22. B

Being fastidious means giving careful attention to detail. She is fastidious about her food.

23. C

Being surly means behaving in a rude bad-tempered way. He became surly and rude toward me.

24. D

Being frugal means avoiding waste. First, you must learn to be frugal.

25. D

To deplete is to use up all the resources or materials. Unfortunately, we have depleted all the fuels and our car couldn't move.

26. D

Force is an influence which produces a change in physical quantity. So I have found that civilization is a force.

27. B

Being extinct means no longer in existence. Within the environment worsen, many species become extinct.

28. D

To thwart is to hinder or prevent the efforts of others. Our plan for a picnic is thwarted by the rain.

29. D

Stipend is a sum of money allotted on a regular basis, usually for some specific purpose. I wish to be awarded a stipend for further research.

30. A

Being reputable means having a good reputation. We only use reputable carrier.

31. B

The relationship here is one of order or sequence. A dessert is eaten at the end of a meal. A finale is played at the end of a performance. Lunch is eaten after breakfast, but it's a different meal, not part of the same one, so the bridge doesn't fit.

32. E

The words in the stem are opposites. The only pair of opposites among the choices is in (E): accept is the opposite of reject, as confirm is the opposite of deny.

33. D

A tower is the rail structure that enables planes to navigate safely at an airport. A lighthouse is the tall structure that enables ships to navigate safely at the shoreline.

34. E

Fidelity is the opposite or absence of unfaithfulness. Honesty is the opposite or absence of deceit. The words in (B) and (A) are synonyms, and there's no clear relationship between the words in (C) and (D).

35. D

If something is widespread, it's not limited. If something is broad, it's not narrow. The words in (C) are synonyms, as are the words in (A) and (E). (B) is a little tough; international seems to suggest sophisticated, which is the opposite of provincial, but the words are in the opposite order as those presented in the stem.

36. B

A saw is a tool used by a carpenter. A plow is a tool used by a farmer. No other occupation listed here requires the use of a plow.

37. D

A sword is used against an opponent in fencing, as a glove is used in boxing.

38. E

Here the relationship is one of degree, with the second word being much stronger than the first. You can encourage or suggest that someone do something, and they may or may not do it. But if you demand or order them to do it, then they must. The words in (B) and (D) are synonyms, and the words in (A) are opposites. Condemn in (C) is stronger than to reprimand, not the other way around, so the order is wrong.

39. D

A grin is a facial expression showing delight. A frown is a facial expression showing dismay. (Dismay is a mixture of fear and discouragement.) A laugh in (A) expresses happiness, but it isn't precisely a facial expression.

40. B

Something mysterious is not understandable. Something obscure is not clear.

41. D

Scissors are specifically used to cut, just as a pencil is specifically used to write.

42. E

The specific topping for pasta is sauce; the specific topping for toast is jam. A noodle (D) is made out of dough, and tomato (A) grows on a vine.

43. B

The outer shell of bread is the crust. The outer shell of an orange is the rind.

44. E

A captain is the leader of a team, just as a president is the leader of a republic. Watch out for (B)—it mentions the word sports, which fits the subject matter of the stem pair, but does not match the bridge.

45. B

Olfactory refers to one's sense of smell, just as tactile refers to one's sense of touch.

46. A

A ruler is a tool used to measure something, just as a camera is a tool used to photograph something.

47. C

Tiptoe is a quiet kind of walk, as whisper is a quiet kind of speech. A rasp (A) is a harsh sound in one's throat.

48. C

A kernel is a central piece of information. Trivia is an unimportant piece of information.

49. E

A liar is a person who fibs, just as a toady is a person who flatters. A politician (A) by definition is not a person who campaigns, but rather, a person who engages in politics. To tally (C) is to count up; a banker may tally money, but he may also do other things like lend money.

50. D

A nap is a short sleep just as a snack is a short meal. A biscuit can be a type of

snack, but we are looking for a word that fits the bridge "is a short".

51. B

The base of a building is its foundation. The base of a plant is its root, (B). If you chose (A), (C), or (E), you were probably confusing the vegetative meaning of "plant" with, say, a manufacturing plant. A grotto is a cave.

52. D

Olfactory refers to anything having to do with the sense of smell. So our bridge could be, the nose is the organ of the olfactory sense. Similarly, the ear is the organ of the sense of hearing or auditory sense, (D).

53. B

Irk means to annoy, disgust or irritate. So the relationship here is of opposites, something that irks is not soothing. In the same way, something that supports is not weakening or undermining, (B). Irritating, (C), is second-best here; it would go better with soothing than with support.

54. E

Something illegible is impossible to read, just as something invisible is impossible to see, (E). Something broken is not by definition impossible to fix.

55. C

Tact is sensitivity, skill at doing or saying the right thing with people. So tact is a necessary quality for a diplomat. In the same way, agility is a necessary quality for a gymnast, which makes (C) correct. Parsimony, (E), or stinginess, is a quality a philanthropist had better not have, since a philanthropist is someone who gives generous amounts of money to charity. Similarly, a judge, (D), should be unbiased, not biased.

which means having a declared preference for one side or the other. Victims may be vulnerable, (B), but you wouldn't ordinarily say that vulnerability is a necessary quality for being a victim. And training in (A) is too vague; it's not a quality specific to the practice of medicine.

56. D

Ravenous means extremely hungry. So to be ravenous is to be in an extreme state of hunger. In the same way, to be furious is to be in an extreme state of indignation, (D). None of the other choices has a first word that's an extreme version of the second word: Pliable, (E), means flexible, while obstinacy is stubbornness, so these words are opposites. The same is true for (A) and (B). Tenacity, (C), is stubborn persistence; being smart is not being in an extreme state of tenacity.

57. A

To amplify sound is to make it stronger or louder. To bolster something means to strengthen it. In the same way, then, to bolster courage is to make it stronger. Getting the right answer here depends a little on knowing common usage. You can't bolster a smell, (C), insomnia or sleeplessness, (D), or light or silence, (B), (E).

58. D

Reverse the order of the stem pair; you attend a lecture in an auditorium. In the same way, you attend a concert in a theatre, (D). This bridge clearly doesn't work on (A), (C), or (E). You attend religious services, not religion itself, in a temple, (B).

59. E

Philanthropic means generous, giving; benevolence is the quality of generosity. So our bridge might be, a philanthropic

act is evidence of benevolence. In the same way, a miserly act is evidence of stinginess, (E). Ostentatious, (D), means showy or extravagant.

60. C

Spurious is simply a fancy word meaning fake. So we've got a relationship of opposites here; something spurious has no authenticity. Similarly, something laughable has no seriousness, (C). Lavish, (E), means extravagantly expensive. Abject means miserable; subjectivity may or may not be miserable, (A). There's no obvious bridge between the words in (B), and in (D), totalitarian refers to an imposing system of government, so it is not the opposite of completeness.

### SECTION 3: QUANTITATIVE REASONING

1. B

This question isn't as hard as it seems. Remember, a cube has six faces. Since you're asked which shape can be folded into a cube with no overlapping flaps, the answer must contain exactly six faces. The only choice that does so is (B).

2. D

You know \$20.05 is close to \$20. Twenty-five percent of \$20 would be \$5, (D).

3. D

Five will divide evenly into numbers that end in five or zero. You are asked to divide 63 by 5. The largest number less than 63 that 5 divides into evenly is 60. This means that five will divide in to 63 with a remainder of three.

4. D

This question is essentially an algebra question. Just isolate the  $\square$  and solve.

$$7,500 + \square - 500 = 9,500$$

$$7,500 + \square = 10,000$$

$$\square = 2,500$$

5. D

The perimeter of a rectangle is equal to  $2(l + w)$ , where  $l$  and  $w$  represent the length and width, respectively. The length of the rectangle is 9, so you need to find its width in order to solve. You're also told that the width of the rectangle is one third of its length so  $\frac{9}{3}$ , or 3, is its width. Plugging in the formula, the perimeter is equal to:  $2(9 + 3) = 2(12) = 24$ , choice (D).

6. B

Angles about a point add up to  $360^\circ$ , so you can write the following equation to solve for  $a$ :

$$45 + 75 + a + 45 + 75 + a = 360$$

$$2a + 240 = 360$$

$$2a = 120$$

$$a = 60$$

7. C

The easiest way to solve is to compare each answer choice, looking for the largest digit in each place holder. The largest tenths digit, for example, is 7. Eliminate (A) since its tenths digit is 0. In the hundredths' place the largest digit is 9. (B) is out, too, since its hundredths digit is 8. (E) doesn't have a thousandths, so it is understood to be 0, which is less than the 2 that appears in the thousandths places in (C) and (D). (D) doesn't have a digit in the ten-thousandths place, so it is understood to be 0. It can be eliminated since it is less than the 3 in the ten-thousandths place. (C) is the largest.

8. D

Break this question down into parts, translating as you go. You're told that 6 added to 3 times a number  $N$  results in

48. Three times  $N$  can be represented algebraically as  $3N$ , and adding 6 to that can be written as  $3N + 6$ . The result is 48, so  $3N + 6 = 48$ , (D).

9. D

You are looking for the choice that, when added to seven, will result in an odd, whole number. Try each answer choice to see which does:

(A)  $7 + 7 = 14$ ; not odd

(B)  $5 + 7 = 12$ ; not odd

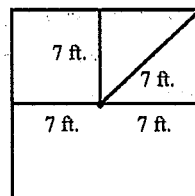
(C)  $\frac{1}{2} + 7 = 7\frac{1}{2}$ ; not a whole number

(D)  $0 + 7 = 7$ ; an odd, whole number!

(E)  $-7 + 7 = 0$ ; not odd

10. B

Try drawing in the bull's leash to get a sense of how far it can graze. Since the length of the fence is 14 feet, and the length of the rope is seven feet, the bull will just be able to reach the center of each side, but not the corners. In other words, the bull will be able to graze in a circle with radius 7, as shown in (B). Though (D) also represents the region as a circle, it is too small.



11. A

First, determine the total number of bushels in the harvest.  $60 + 100 + 80 = 240$

To find the percentage of corn, divide the bushels of corn by the total number of bushels.

$$\frac{60}{240} = \frac{1}{4} = 25\%$$

12. E

Multiples result when you multiply a number by an integer. Multiples are



always greater than or equal to the original number. 8 is the multiple of 4 in this case because

$$4 \times 2 = 8.$$

13. D

Convert to common units. Inches are a good choice. The ratio then becomes 38:24, which is 19:12.

14. C

Use the distance formula (the Pythagorean theorem in disguise).

The difference in  $x$  coordinates is  $(-16) - (-10) = -6$ . The difference in  $y$  coordinates is  $(-9) - (-13) = 4$ .

You can use the Pythagorean Theorem;  
Distance =

$$\sqrt{(-6)^2 + (4)^2} = \sqrt{36 + 16} = \sqrt{52} = \sqrt{2 \times 2 \times 13} = 2\sqrt{13}$$

15. E

A pentagon has five sides. A regular pentagon has five congruent sides. To get the perimeter, multiply the length of each side by the number of sides.

$$4 \times 5 = 20$$

16. E

To break a number into its prime factors, break it into factors, and break those factors into factors, until you cannot go any further. It doesn't matter what factors you begin with; you will be prime numbers (they have exactly two factors, namely 1 and themselves).

Another way to approach this problem is to rule out the answers that have composite (non-prime) numbers. This rules out choices (A), (B) and (D). Test the remaining answers by multiplying them out. Only choice (E) comes to 60.

17. C

First find the amount Mike paid for the shares.

$$\$120 \times 10 = \$1,200$$

Then find the amount Mike sold the shares for.

$$\$40 \times 10 = \$400$$

Then subtract,  $\$1,200 - \$400 = \$800$

18. E

By the Pythagorean Theorem;

$$a^2 + b^2 = c^2$$

$$a^2 + 3^2 = 5^2$$

$$a^2 + 9 = 25$$

$$\sqrt{a^2} = \sqrt{16}$$

$$a = 4$$

19. D

$$a = \frac{1}{2}(4)(2\sqrt{3}) = 4\sqrt{3} = \text{area of one triangle.}$$

There are six triangles in a hexagon.

$$6(4\sqrt{3}) = 24\sqrt{3}$$

20. E

$$|4a - 3| = 5$$

$$4a - 3 = 5$$

$$4a = 8$$

$$a = 2$$

OR

$$4a - 3 = -5$$

$$4a = -2$$

$$a = -\frac{1}{2}$$

$$a \text{ can equal } 2 \text{ or } -\frac{1}{2}$$

21. E

The sum of the first six grades is  $83 \times 6 = 498$ . (To find the average grade of 83, divide the sum of the six grades by 6.)

The average with seven students is  $498 + x = 85 \times 7$ .

$$498 + x = 595; x = 97$$

22. A

All factors of 6 are factors of the number.

The factors of 6 are;

$$1 \times 6$$

$$2 \times 3$$

23. C

Since this is an isosceles triangle, the angles opposite the congruent sides are also congruent. The sum of the angles in a triangle equal  $180^\circ$ . So  $65^\circ + 65^\circ + x^\circ = 180^\circ$  and  $x = 50^\circ$ .

24. E

Let  $p$  equal the price of the item.

Price  $\times$  Discount Rate = Discount Amount

So  $p \times 20\% = \$8.00$ ;

$p \times 0.020 = 8.00$ ;

$$p = \frac{8.00}{0.20} = 40$$

25. E

On Monday,  $\frac{1}{8}$  of the pie was eaten. On

Tuesday, there was  $\frac{7}{8}$  of the pie left.

$$\frac{1}{4} \times \frac{7}{8} = \frac{7}{32} \quad \text{and} \quad \frac{1}{8} + \frac{7}{32} = \frac{11}{32}$$

#### SECTION 4: READING COMPREHENSION

##### Passage 1

1. C

The passage states humans adapted to the climate change. Choices (A), (D) and (E) describe only part of the content of the passage. Choice (B) is incorrect because the passage is not about a conflict.

2. D

Because "aurochs" is included in a list of "appropriate forest animals" that "stocked" the forest, it is a surviving animal. The other answers ignore this information.

3. D

Although the passage states the animals' disappearance was "perhaps hastened" by hunting, hunting is not given as the major cause, so choice (C) is incorrect. The conclusion of the passage contradicts choice (E). The contents of choices (A) and (B) do not appear in the passage.

4. A

While choices (B), (C) and (E) may determine what happens to a society, these are not discussed in the passage. Choice (D) is incorrect because the reference to coats in the passage's last sentence is an adaptation, not a cause.

5. A

The first time it is used, "coat" refers to an animal's fur or hide; the second time it is used, it refers to an article of clothing worn by a person. Thus, choices (B) and (D) are incorrect. Choice (E) is incorrect because it refers to an action, not an object. Choice (C) is incorrect because the sentence does not require individual interpretation.

##### Passage 2

6. E

The word "catechized" means to "instruct in basic principles of church doctrine", so it makes sense that it is used here to refer to new black members of the Union League being instructed in important basic principles.

7. C

In context "franchise" refers to the legal right to vote. "Exercise" means to put to use. Thus, "exercise their franchise" means vote to elect government officials.

8. B

The author says, "With the establishment of Radical Reconstruction, the league became the spearhead for Southern Republicanism. Because blacks were the most numerous enfranchised group in many areas, the league depended on them for the bulk of Republican strength" (lines 15-18).

9. D

The author says that all of the people and groups mentioned except Union troops in the South strongly supported the Republican party in the South.

10 D

The author says, "During most of Reconstruction, the Union League and such smaller organizations as the Lincoln Brotherhood and the Red Strings delivered the black vote to the Republican Party" (lines 36-38).

## Passage 3

11 D

The theory is outlined in lines 10-30.

12 D

We can infer this from the theory described in lines 10-30. As described in the theory, the parasite must keep extending its life cycle to keep up with the cicada's increasing life cycle. The parasite thus must have become extinct after Magicicada tredecim's life cycle became 13 years.

13 C

This is not true because, according to the theory described in the passage, the longer the cicada's life cycle is, the more difficult it will be for its parasite to survive.

14 C

The theory explains the phenomenon very well, but the fact that the parasite has not been found (lines 29-30) does not provide good empirical support.

15 C

As mentioned in 13 above, the fact that the parasite hasn't been found provides good support for the theory. The discovery of the parasite would be strong evidence against the theory, but it wouldn't invalidate it because it's possible that the parasite survived even though it had to make it through the difficult 272-year period mentioned in line 31, in which there were no cicadas to parasitize.

## Passage 4

16 D

You have to hear the author's voice to figure out his or her attitude. Given

stanza three, one might think choice (C) is possible. Choices (B), (D) and (E) cannot be found in the poem.

17. B

"Limousine" changes the poem from serious to amusing. Choices (A), (C) and (D) are words that signify love and its meaning, while choice (E) refers to what the flower means.

18. D

The author has the rose speak. This is clearly not an example of choice (A). Choice (B), hyperbole (which means exaggeration), is the closest to the correct answer. Choices (C) and (E) are incorrect, but well worth looking up.

19. E

The dew receives its smell from the rose. The dew may be rose-colored, but that is not the meaning of "scented". Choices (A), (C) and (D) are all inappropriate.

20. A

One has to infer the positive response in lines 1-4 as a contrast to the wry response of lines 5-9. Choice (B) is close, but the receiver of the rose just has a different interpretation of what a rose can mean. Choice (D) is off base, and choices (C) and (E) are inappropriate.

## Passage 5

21. E

Line 4 refer to the reservation jukebox, and line 10 refers to the reservation as well. If Thomas, Chess, and Checkers live on a reservation, they are most likely Native American.

22. C

Because their song is one of mourning, (C) is the most logical choice. In addition, the context clue Samuel was still alive, but tells us that the song is traditionally reserved for the dead.

23. C

To sing a mourning song for someone who is still alive suggests that that person's life is mournful—full of grief, sadness, or sorrow.

24. B

In lines 7-8, the narrator states that Thomas wanted his tear to be individual, not tribal, suggesting too that he felt his father deserved to be mourned as an individual.

25. E

The author is speaking figuratively here—the BIA does not literally collect and ferment Indian tears and return them to the reservation in beer and Pepsi cans.

26. C

In line 23, the narrator states that Thomas wanted the songs, the stories, to save everybody. The paragraph tells readers how many songs Thomas knew but how something seemed to be missing (e.g., he never sang them correctly); how Thomas wanted to play the guitar but how his guitar only sounded like a guitar (lines 18-19). He wanted his songs to do more, to rescue others.

#### Passage 6

27. C

This really is a vocabulary question. A *sojourn* is a visit or a temporary stay.

28. B

The context of the second paragraph should help you to figure out the meaning of this word. In other contexts, *decipher* may mean to *decode*. Here it means to *make out the meaning of ancient, nearly illegible, inscriptions or writings*.

29. A

See the last sentence of the first paragraph. By enlarging on hitherto known tales of the named persons, the scroll is giving

new details about persons already known of. The scroll is the last of the seven found in 1947, not the first. It tells of Abraham's stay in Egypt, but it was found in the Judean desert of Israel.

30. D

The second paragraph opens by telling us that the scroll belongs to Hebrew University. If you were not certain that Hebrew University is an Israeli university, the statement that the work is being done under the supervision of Israeli scholars (last sentence) should confirm this.

31. B

If this question gives you trouble, reread the middle of the second paragraph. The readable material included; four full pages, legible parts of five other pages, and some lines and words on additional pages.

#### Passage 7

32. D

This inference question is answered in the opening paragraph. The author states that the bird's identification and courtship procedures are important "because if birds of different species mate, any offspring" will be sterile and have a low chance for survival. Thus, the procedures are important because they help a bird find a mate of its own species. (C) focuses too narrowly on a detail from paragraph 2.

33. D

The answer lies in paragraph 3, which states that a male's singing tells females of its species that "it is in breeding condition", I, and, after mating, enables the nesting female "to continue to identify" her partner, III. The passage does not mention that male birds use sound to intimidate male rivals, II, so

I and III only are correct.

34. E

This Detail question focuses on the last sentence of paragraph 2. There we learn that whooping cranes "perform wonderfully elaborate courtship dances". So the whooping crane's an example of a bird that behaves in an unusual, noteworthy way during courtship, and (E) is correct. (A), (B) and (C) incorrectly mention other details from paragraph 2—plumage, reversed roles, and aggressiveness.

35. E

The answer here is taken from the same sentence—the last of paragraph 1—that answered question 35. If birds of different species mate, "any offspring will usually be sterile or badly adapted to their surroundings". This point is restated in (E). (D) is the opposite of the correct choice. The frequency of interspecies mating (B) is not mentioned in the passage, but it must happen occasionally, contrary to (C), or the author wouldn't warn against its dangers. The idea of a new species evolving (A) is not discussed.

Passage 8

36. D

You're asked to infer the poem's central metaphor. What do the seasons represent? The successive stages of life, (D): spring is youth, summer is maturity, autumn is middle age, and winter is old age.

37. B

Who is the "he" of line 13? The entire stanza provides clues; "he" has lost his leaves, "he" stands, "trunk and bough, naked strength." "He", then, is the oak tree.

38. D

The second stanza shows the oak tree in summer and in autumn; "gold again"

refers to the seasonally-changed color of the oak tree's leaves, so (D) is best here. (A), (C) and (E) are pretty easily eliminated, and (B) isn't right because the arrival of autumn signals a change in foliage—and the quoted phrase refers to the latter, not the former.

39. B

This is a detail question. The oak is referred to as "living gold" in line 5 of the poem; the previous line says, "bright in spring".

40. E

This question basically asks for the statement that mirrors the poem's Big Idea, which is that we should be like the oak tree, living each season of our lives as well as we can. (E) restates this best. (A) is wrong because its "something" can apparently be accomplished at any point in one's life; what about the other "seasons"? (B) makes little sense, and (C) contradicts the poem. (D) dispenses with the poem's central metaphor altogether; it's not that a good life includes the enjoyment of trees, it's that a good life is lived as a tree lives its life.

## SECTION 5: MATHEMATICS ACHIEVEMENT

1. C

Translate from English into math. Let Bob's current age =  $x$  and let Jerry's current age =  $x + 5$ . To find their ages 4 years ago, subtract 4 years from each current age; 4 years ago Bob was  $x - 4$  and Jerry was  $x + 5 - 4 = x + 1$ . The sum of Bob and Jerry's ages 4 years ago was:  
 $x - 4 + x + 1 = 2x - 3$ .

2. D

The contestant answered a total of 5 questions correctly. Using our percent

formula,  $\text{Percent} \times \text{Whole} = \text{Part}$ ,  $20\% \times \text{total number of questions} = 5$ . Multiply both sides of the equation by  $\frac{100}{20}$ , (the reciprocal of  $20\%$ ) and the total number of questions = 25. Thus, statement I is incorrect so eliminate (A), (C) and (E). For statement II, there were  $25 - 15 = 10$  questions remaining and 1 of these 10 questions was answered correctly. So he answered  $\frac{1}{10}$ , or  $10\%$  of the remaining questions correctly, so statement II is true. (Also, both remaining answer choices, (B) and (D), contain this Roman numeral.) Finally, statement III is true because 1 of the remaining 10 was answered correctly so 9 of these 10 were not answered correctly. Eliminate choice (B). (D) remains and is correct.

3. D

This problem is perfect for our Picking Numbers strategy.  $C = A \times B$ . Pick two consecutive numbers for  $A$  and  $B$  such as 2 and 3. Their product is 6 and positive. However, if we selected 1 and 0, the product would be 0 which is neither positive nor negative. Because the integers are consecutive, one of the integers must be even, or a multiple of 2, and hence the product of any two consecutive integers must be even. (D) is correct.

4. E

Be careful here. The question asks for the difference before the discount. The sweaters were sold for  $100\% - 40\%$  of their old price. Using our percent formula,  $\text{Part} = \text{Percent} \times \text{Whole}$ , we have that  $54 = 60\% \times \text{old price}$ . Convert  $60\%$  to  $\frac{60}{100}$  and multiply both sides by  $\frac{100}{60}$ . We now have  $\frac{100}{60} \times 54 = \text{old price}$ . Canceling yields

\$ 90. Use the percent formula for the wool sweater and you have the equation  $\$72 = 60\% \times \text{old price}$ . You'll find that its original price was \$ 120. The difference is  $\$120 - \$90 = \$30$ .

5. B

The maximum load that a car can carry is 18 tons. If each car carries the maximum load minus  $\frac{5}{9}$  of a ton then each car carries  $18 - \frac{5}{9} = \frac{162}{9} - \frac{5}{9} = \frac{162-5}{9} = \frac{157}{9}$  tons. Next multiply this amount carried in each car by 40 cars and we get  $\frac{157}{9} \times 40$  tons. We get  $\frac{157}{9} \times 40 = 697 \frac{7}{9}$ .

6. E

In one hour, the minute hand of a clock goes around in a complete circle. In two hours, it revolves through two circles. Because each circle consists of  $360^\circ$ , two revolutions equal  $720^\circ$ .

7. C

A fraction is not more than  $\frac{1}{3}$  if three times the numerator is not more than the denominator. Of the fractions listed, only  $\frac{15}{46}$  has a numerator that is not more than  $\frac{1}{3}$  of the denominator.

8. B

The figure is a square, so all four sides are equal in length. The perimeter is the sum of the lengths of the four sides.

Each side is  $\frac{2x+1}{3}$ .

The sum, then, is  $\left(\frac{2x+1}{3}\right) + \left(\frac{2x+1}{3}\right) + \left(\frac{2x+1}{3}\right) + \left(\frac{2x+1}{3}\right) = \frac{8x+4}{3}$ .

You could also multiply  $\frac{2x+1}{3}$  by 4 for the same result.

9. C

The face of the cube is a square, 1" by 1".  
Use the Pythagorean Theorem to find the  
length of the diagonal of the square.

$$c^2 = a^2 + b^2$$

$$c^2 = 1^2 + 1^2$$

$$c^2 = 2$$

$$c = \sqrt{2}$$

10. A

The average speed for the entire trip is  
the total distance (360 miles) divided by  
the total time (5 hours), which yields  
72 mph.

11. E

This is a proportion problem. Set up the  
proportion as follows:

$$\frac{1 \frac{1}{4}}{4} = \frac{2 \frac{3}{8}}{?}$$

Substitute  $x$  for ?

$$\frac{1 \frac{1}{4}}{4} = \frac{2 \frac{3}{8}}{x}$$

Cross-multiply:

$$\frac{1 \frac{1}{4}}{4} \times \frac{2 \frac{3}{8}}{x}$$

$$1 \frac{1}{4}x = 4 \cdot 2 \frac{3}{8}$$

Divide both sides by the coefficient of  $x$   
and calculate:

$$\frac{5}{4}x = \frac{76}{8}$$

$$x = \frac{76}{8} \div \frac{5}{4}$$

$$x = \frac{76}{8} \times \frac{4}{5}$$

$$x = 7 \frac{3}{5}$$

12. D

To find the ratio of the circle to the area  
of the square, first find the area of  
each. Note that the diameter of the  
circle equals the width of the square.

Area of the square =  $6'' \times 6'' = 36$  sq. in.

Area of circle =  $\pi 3^2 = 9\pi = 9 \cdot \frac{22}{7} = \frac{108}{7} =$

28 sq. in., approximately.

Ratio of the area of the circle to the area  
of the square:  $\frac{28}{36} = \frac{7}{9}$

13. A

The difference is 0.80 inches, but the  
outside diameter consists of two thicknesses  
of metal (one on each side). Therefore,  
the thickness of the metal is  $0.80 \div 2 =$   
0.40 inches.

14. C

If 40% of the games were predicted  
accurately, 60% of the games were  
predicted inaccurately.

Let  $x$  = games played

$$0.60x = 30$$

$$x = 50 \text{ games played}$$

$$50 - 30 = 20 \text{ games won}$$

Therefore, the sportswriter was accurate  
for 20 games.

15. E

Forty percent of the boys are from New  
York State, and 10% of them (0.10 of  
them) are from New York City. Therefore,  
4% ( $0.40 \times 0.10$ ) of the boys in the  
camp are from New York City.

16. A

This can be set up as a proportion where  
 $x$  is the unknown number:

$$\frac{55}{x} = \frac{110}{0.55}$$

This is a good problem for estimation.  
Study the numerators of the fractions and  
note that 55 is one half of 110. Therefore,  
the denominators of the fractions must  
have the same relationship. One half of  
0.55 is 0.275.

17. D

The square root of 30 is less than the square root of 36, which is 6, and greater than the square root of 25, which is 5. Therefore,  $n$  is between 5 and 6.

18. C

To find the difference, we subtract  $-4$  from 4 and move from  $-4$  to 4, a distance of  $-8$  units.

19. B

Simply divide  $\frac{3}{5}$  by  $\frac{1}{6}$  to find the answer.

$$\frac{3}{5} \div \frac{1}{6} = \frac{3}{5} \cdot \frac{6}{1} = \frac{18}{5} = 3 \frac{3}{5}$$

20. A

Four games averaging 34,800 people per game total 139,200 attendance. The total for the first three games was 105,500. The fourth game attracted 33,700 people.