

PRACTICE DRILL 6—FUNCTIONS

1. Let $b^* = 2b + 7$. What is the value of 5^* ?

- (A) -1
- (B) 6
- (C) 14
- (D) 17

2. If $inl = 4n - 4$ and $lnl = 20$, what is the value of n ?

- (A) 4
- (B) 6
- (C) 20
- (D) 76

3. If $a\Delta b = 4a + 3b$, then $3\Delta b =$

- (A) $4a + 9$
- (B) $7 + 3b$
- (C) $12 + b^2$
- (D) $12 + 3b$

4. In the three-digit number, $3H8$, H represents a digit. If $3H8$ is divisible by 3, which of the following could be H ?

- (A) 2
- (B) 3
- (C) 5
- (D) 7

5. For any integer c , let $\diamond c = 2c + c(c + 3)$

What is $\diamond 10 - \diamond 3$?

- (A) 24
- (B) 84
- (C) 126
- (D) 150

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1. **D**

In this equation, 5 will replace b . Thus, $2(5) + 7 = 10 + 7 = 17$. The correct answer is (D).

2. **B**

Since the function is equal to 20, it can be rewritten as $20 = 4n - 4$. Solve for n . Add 4 to both sides of the equation to get $24 = 4n$. Divide both sides by 4 to get $n = 6$. The correct answer is (B).

3. **D**

The value in front of Δ is a , and the value after Δ is b . Therefore, $3\Delta b$ can be rewritten as $4(3) + 3b$ or $12 + 3b$. The correct answer is (D).

4. **D**

Use PITA to evaluate the expression and then determine if the resulting 3-digit number is divisible by 3. The numbers 328, 338, and 358 are not divisible by 3. The number 378 is divisible by 3. The correct answer is (D).

5. **C**

In this equation, the numerical value inside the $\diamond$ will replace c where it appears in the equation. Thus, $\diamond 10 = 2(10) + 10(10+3) = 20 + 10(13) = 150$. Next find $\diamond 3$, which is $2(3) + 3(3+3) = 6 + 3(6) = 24$. Finally, find $\diamond 10$, which is $150 - 24 = 126$. The correct answer is (C). Note: $\diamond 10 - \diamond 3$ is not equivalent to $\diamond 7$, which is (B).