

PRACTICE DRILL 19—MANIPULATING AN EQUATION (MIDDLE AND UPPER LEVELS ONLY)

1. If $8 = 11 - x$, then $x =$
2. If $4x = 20$, then $x =$
3. If $5x - 20 = 10$, then $x =$
4. If $4x + 3 = 31$, then $x =$
5. If $m + 5 = 3m - 3$, then $m =$
6. If $2.5x = 20$, then $x =$
7. If $0.2x + 2 = 3.6$, then $x =$
8. If $6 = 8x + 4$, then $x =$
9. If $3(x + y) = 21$, then $x + y =$
10. If $3x + 3y = 21$, then $x + y =$
11. If $100 - 5y = 65$, then $y =$

Practice Drill 19—Manipulating an Equation

1. 3

To isolate x , add x to both sides. Then subtract both sides by 8. Check your work by plugging in 3 for x : $8 = 11 - 3$.

2. 5

To isolate x , divide both sides by 4. Check your work by plugging in 5 for x : $4 \times 5 = 20$.

3. 6

To isolate x , add 20 to both sides. Then divide both sides by 5. Check your work by plugging in 6 for x : $5(6) - 20 = 10$.

4. 7

To isolate x , subtract 3 from both sides. Then divide both sides by 4. Check your work by plugging in 7 for x : $4 \times 7 + 3 = 31$.

5. 4

To isolate m , add 3 to both sides. Subtract m from both sides. Then divide both sides by 2. Check your work by plugging in 4 for m : $4 + 5 = 3(4) - 3$.

6. 8

To isolate x , divide both sides by 2.5. Check your work by plugging in 8 for x : $2.5 \times 8 = 20$.

7. 8

To isolate x , subtract 2 from both sides. Then divide both sides by 0.2. Check your work by plugging in 8 for x : $0.2 \times 8 + 2 = 3.6$.

8. $\frac{1}{4}$

To isolate x , subtract 4 from both sides. Then divide both sides by 8. Check your work by plugging in $\frac{1}{4}$ for x : $6 = 8 \times \frac{1}{4} + 4$.

9. 7

To isolate $x + y$, divide both sides by 3. Check your work by plugging in 7 for $x + y$: $3(7) = 21$.

10. 7

To isolate $x + y$, factor out a 3 from both terms on the left side: $3(x + y) = 21$. Then divide both sides by 3. Check your work by plugging in 7 for $x + y$: $3(7) = 21$. Note that this question and the previous question are really the same equation. Did you see it?

11. 7

To isolate y , subtract 100 from both sides. Then divide both sides by -5 . Check your work by plugging in 7 for x : $100 - 5 \times 7 = 65$.