

KEY

3.2 & 3.3 Worksheet

Solve.

$$\begin{aligned} 1. \quad 3x + 7 &= 19 \\ \cancel{-7} \quad \cancel{-7} \\ 3x &= 12 \\ \cancel{\div 3} \quad \cancel{\div 3} \\ x &= 4 \end{aligned}$$

$$\begin{aligned} 2. \quad 5h + 4 &= 19 \\ \cancel{-4} \quad \cancel{-4} \\ 5h &= 15 \\ \cancel{\div 5} \quad \cancel{\div 5} \\ h &= 3 \end{aligned}$$

$$\begin{aligned} 3. \quad 7d - 1 &= 13 \\ \cancel{+1} \quad \cancel{+1} \\ 7d &= 14 \\ \cancel{\div 7} \quad \cancel{\div 7} \\ d &= 2 \end{aligned}$$

$$\begin{aligned} 4. \quad \frac{a}{3} + 4 &= 6 \\ \cancel{-4} \quad \cancel{-4} \\ \frac{a}{3} &= 2 \\ \cancel{\cdot 3} \quad \cancel{\cdot 3} \\ a &= 6 \end{aligned}$$

$$\begin{aligned} 5. \quad 17 &= \frac{w}{5} + 13 \\ \cancel{-13} \quad \cancel{-13} \\ 5 &= \frac{w}{5} \\ \cancel{\cdot 5} \quad \cancel{\cdot 5} \\ w &= 20 \end{aligned}$$

$$\begin{aligned} 6. \quad 7 &= \frac{5}{6}c - 8 \\ \cancel{+8} \quad \cancel{+8} \\ \frac{15}{6} &= \frac{5}{6}c \\ \cancel{\cdot 6} \quad \cancel{\cdot 6} \\ c &= 18 \end{aligned}$$

$$\begin{aligned} 7. \quad 8y + 3y &= 44 \\ \cancel{11y} \quad \cancel{11} \\ y &= 4 \end{aligned}$$

$$\begin{aligned} 8. \quad 11x - 9x &= 18 \\ \cancel{2x} \quad \cancel{2} \\ x &= 9 \end{aligned}$$

$$\begin{aligned} 9. \quad p + 2p - 3 &= 6 \\ \cancel{3p} \quad \cancel{3} \\ p &= 3 \end{aligned}$$

$$\begin{aligned} 10. \quad 12v + 14 + 10v &= 80 \\ 22v + 14 &= 80 \\ \cancel{-14} \quad \cancel{-14} \\ 22v &= 66 \\ \cancel{\div 22} \quad \cancel{\div 22} \\ v &= 3 \end{aligned}$$

$$\begin{aligned} 11. \quad 11w - 9 - 7w &= 15 \\ 4w - 9 &= 15 \\ \cancel{+9} \quad \cancel{+9} \\ 4w &= 24 \\ \cancel{\div 4} \quad \cancel{\div 4} \\ w &= 6 \end{aligned}$$

$$\begin{aligned} 12. \quad 5a + 3 - 3a &= -7 \\ 2a + 3 &= -7 \\ \cancel{-3} \quad \cancel{-3} \\ 2a &= -10 \\ \cancel{\div 2} \quad \cancel{\div 2} \\ a &= -5 \end{aligned}$$

$$\begin{aligned} 13. \quad 3 + 4(z + 5) &= 31 \\ 3 + 4z + 20 &= 31 \\ 4z + 23 &= 31 \\ \cancel{-23} \quad \cancel{-23} \\ 4z &= 8 \\ \cancel{\div 4} \quad \cancel{\div 4} \\ z &= 2 \end{aligned}$$

$$\begin{aligned} 14. \quad 14 + 2(4g - 3) &= 40 \\ 14 + 8g - 6 &= 40 \\ 8g + 8 &= 40 \\ \cancel{-8} \quad \cancel{-8} \\ 8g &= 32 \\ \cancel{\div 8} \quad \cancel{\div 8} \\ g &= 4 \end{aligned}$$

$$\begin{aligned} 15. \quad 5l + 2(l + 1) &= 23 \\ 5l + 2l + 2 &= 23 \\ 7l + 2 &= 23 \\ \cancel{-2} \quad \cancel{-2} \\ 7l &= 21 \\ \cancel{\div 7} \quad \cancel{\div 7} \\ l &= 3 \end{aligned}$$

$$\begin{aligned} 16. \quad 5h + 2(11 - h) &= -5 \\ 5h + 22 - 2h &= -5 \\ 3h + 22 &= -5 \\ \cancel{-22} \quad \cancel{-22} \\ 3h &= -27 \\ \cancel{\div 3} \quad \cancel{\div 3} \\ h &= -9 \end{aligned}$$

$$\begin{aligned} 17. \quad 27 &= 3c - 3(6 - 2c) \\ 27 &= 3c - 18 + 6c \\ 27 &= 9c - 18 \\ \cancel{+18} \quad \cancel{+18} \\ 45 &= 9c \\ \cancel{\div 9} \quad \cancel{\div 9} \\ c &= 5 \end{aligned}$$

$$\begin{aligned} 18. \quad 3 &= 6c - 5(2c - 7) \\ 3 &= 6c - 10c + 35 \\ 3 &= -4c + 35 \\ \cancel{-35} \quad \cancel{-35} \\ -32 &= -4c \\ \cancel{\div -4} \quad \cancel{\div -4} \\ c &= 8 \end{aligned}$$

Write an equation for the function described. Then find the input.

19. The output of a function is 7 more than 3 times the input. Find the input when the output is -8.

$$\begin{array}{r} 3x + 7 = -8 \\ -7 \quad -7 \\ \hline 3x = -15 \\ \frac{3x}{3} = \frac{-15}{3} \end{array} \quad \boxed{x = -5}$$

20. The output of a function is 4 more than 2 times the input. Find the input when the output is -10.

$$\begin{array}{r} 2x + 4 = -10 \\ -4 \quad -4 \\ \hline 2x = -14 \\ \frac{2x}{2} = \frac{-14}{2} \end{array} \quad \boxed{x = -7}$$

21. The output of a function is 9 less than 10 times the input. Find the input when the output is 11.

$$\begin{array}{r} 10x - 9 = 11 \\ +9 \quad +9 \\ \hline 10x = 20 \\ \frac{10x}{10} = \frac{20}{10} \end{array} \quad \boxed{x = 2}$$

22. Tyler paid \$124 to get his car repaired. The total cost for the repairs was the sum of the amount paid for parts and the amount paid for labor. Tyler was charged \$76 for parts and \$32 per hour for labor. Find the amount of time it took to repair his car.

$$\begin{array}{r} 32x + 76 = 124 \\ -76 \quad -76 \\ \hline 32x = 48 \\ \frac{32x}{32} = \frac{48}{32} \\ x = 1.5 \end{array}$$

1.5 hours