

Solve.

$$1. \begin{array}{r} 9x - 2 = 8x + 7 \\ -8x \quad -8x \\ \hline x - 2 = 7 \\ +2 \quad +2 \\ \hline x = 9 \end{array}$$

$$x - 2 = 7 \\ +2 \quad +2 \\ \hline x = 9$$

$$2. \begin{array}{r} 5n - 3 = 3n + 1 \\ -3n \quad -3n \\ \hline 2n - 3 = 1 \\ +3 \quad +3 \\ \hline 2n = 4 \\ \frac{2n}{2} = \frac{4}{2} \\ n = 2 \end{array}$$

$$2n - 3 = 1 \\ +3 \quad +3 \\ \hline 2n = 4 \\ \frac{2n}{2} = \frac{4}{2} \\ n = 2$$

$$3. \begin{array}{r} 4z - 5 = 8z + 3 \\ -4z \quad -4z \\ \hline -5 = 4z + 3 \\ -3 \quad -3 \\ \hline -8 = 4z \\ \frac{-8}{4} = \frac{4z}{4} \\ z = -2 \end{array}$$

$$-5 = 4z + 3 \\ -3 \quad -3 \\ \hline -8 = 4z \\ \frac{-8}{4} = \frac{4z}{4} \\ z = -2$$

$$4. \begin{array}{r} -a + 4 = a + 6 \\ +a \quad +a \\ \hline 4 = 2a + 6 \\ -6 \quad -6 \\ \hline -2 = 2a \\ \frac{-2}{2} = \frac{2a}{2} \\ a = -1 \end{array}$$

$$4 = 2a + 6 \\ -6 \quad -6 \\ \hline -2 = 2a \\ \frac{-2}{2} = \frac{2a}{2} \\ a = -1$$

$$5. \begin{array}{r} w + 8 = w - 3 \\ -w \quad -w \\ \hline 8 = -3 \end{array}$$

$$8 = -3 \\ \text{NS}$$

$$6. \begin{array}{r} 6p - 3 = 4p - 1 \\ -4p \quad -4p \\ \hline 2p - 3 = -1 \\ +3 \quad +3 \\ \hline 2p = 2 \\ \frac{2p}{2} = \frac{2}{2} \\ p = 1 \end{array}$$

$$2p - 3 = -1 \\ +3 \quad +3 \\ \hline 2p = 2 \\ \frac{2p}{2} = \frac{2}{2} \\ p = 1$$

$$7. \begin{array}{r} 2(y - 3) = y + 4 \\ 2y - 6 = y + 4 \\ -y \quad -y \\ \hline y - 6 = 4 \\ +6 \quad +6 \\ \hline y = 10 \end{array}$$

$$2y - 6 = y + 4 \\ -y \quad -y \\ \hline y - 6 = 4 \\ +6 \quad +6 \\ \hline y = 10$$

$$8. \begin{array}{r} 3(m + 2) = 8 + m \\ 3m + 6 = 8 + m \\ -m \quad -m \\ \hline 2m + 6 = 8 \\ -6 \quad -6 \\ \hline 2m = 2 \\ \frac{2m}{2} = \frac{2}{2} \\ m = 1 \end{array}$$

$$3m + 6 = 8 + m \\ -m \quad -m \\ \hline 2m + 6 = 8 \\ -6 \quad -6 \\ \hline 2m = 2 \\ \frac{2m}{2} = \frac{2}{2} \\ m = 1$$

$$9. \begin{array}{r} 6 + x = 6(x - 5) \\ 6 + x = 6x - 30 \\ -x \quad -x \\ \hline 6 = 5x - 30 \\ +30 \quad +30 \\ \hline 36 = 5x \\ \frac{36}{5} = \frac{5x}{5} \\ x = \frac{36}{5} \end{array}$$

$$6 + x = 6x - 30 \\ -x \quad -x \\ \hline 6 = 5x - 30 \\ +30 \quad +30 \\ \hline 36 = 5x \\ \frac{36}{5} = \frac{5x}{5} \\ x = \frac{36}{5}$$

$$10. \begin{array}{r} 7(b + 3) = 7b - 4 \\ 7b + 21 = 7b - 4 \\ -7b \quad -7b \\ \hline 21 = -4 \end{array}$$

$$7b + 21 = 7b - 4 \\ -7b \quad -7b \\ \hline 21 = -4 \\ \text{NS}$$

$$11. \begin{array}{r} 5d - 3 + 2d = 4d + 9 \\ 7d - 3 = 4d + 9 \\ -4d \quad -4d \\ \hline 3d - 3 = 9 \\ +3 \quad +3 \\ \hline 3d = 12 \\ \frac{3d}{3} = \frac{12}{3} \\ d = 4 \end{array}$$

$$7d - 3 = 4d + 9 \\ -4d \quad -4d \\ \hline 3d - 3 = 9 \\ +3 \quad +3 \\ \hline 3d = 12 \\ \frac{3d}{3} = \frac{12}{3} \\ d = 4$$

$$12. \begin{array}{r} 4(2m + 5) = 3m - 5 \\ 8m + 20 = 3m - 5 \\ -3m \quad -3m \\ \hline 5m + 20 = -5 \\ -20 \quad -20 \\ \hline 5m = -25 \\ \frac{5m}{5} = \frac{-25}{5} \\ m = -5 \end{array}$$

$$8m + 20 = 3m - 5 \\ -3m \quad -3m \\ \hline 5m + 20 = -5 \\ -20 \quad -20 \\ \hline 5m = -25 \\ \frac{5m}{5} = \frac{-25}{5} \\ m = -5$$

$$13. \begin{array}{r} 5x + 11 = 4x + 18 \\ -4x \quad -4x \\ \hline x + 11 = 18 \\ -11 \quad -11 \\ \hline x = 7 \end{array}$$

$$x + 11 = 18 \\ -11 \quad -11 \\ \hline x = 7$$

$$14. \begin{array}{r} 11p - 4 = 6p + 1 \\ -6p \quad -6p \\ \hline 5p - 4 = 1 \\ +4 \quad +4 \\ \hline 5p = 5 \\ \frac{5p}{5} = \frac{5}{5} \\ p = 1 \end{array}$$

$$5p - 4 = 1 \\ +4 \quad +4 \\ \hline 5p = 5 \\ \frac{5p}{5} = \frac{5}{5} \\ p = 1$$

$$15. \begin{array}{r} 15x - 8 = 14x + 13 \\ -14x \quad -14x \\ \hline x - 8 = 13 \\ +8 \quad +8 \\ \hline x = 21 \end{array}$$

$$x - 8 = 13 \\ +8 \quad +8 \\ \hline x = 21$$

16.  $\frac{4z}{-4z} - 15 = \frac{4z}{-4z} + 11$

$-15 = 11$

**NS**

17.  $4(w + 3) = w - 15$

$4w + 12 = w - 15$

$3w + 12 = -15$

$\frac{3w}{3} = \frac{-27}{3}$

**W = -9**

18.  $8b + 11 - 3b = 2b + 2$

$5b + 11 = 2b + 2$

$3b + 11 = 2$

$\frac{3b}{3} = \frac{-9}{3}$

**b = -3**

19.  $7 + x = \frac{1}{2}(4x - 2)$

$7 + x = 2x - 1$

$7 = x - 1$

**x = 8**

20.  $\frac{1}{4}(8z - 4) = z + 8 - 2z$

$2z - 1 = -z + 8$

$3z - 1 = 8$

$\frac{3z}{3} = \frac{9}{3}$

**z = 3**

21.  $\frac{1}{3}(6x + 3) = 2x - 5$

$2x + 1 = 2x - 5$

$1 = -5$

**NS**

22. Find the perimeter of the square.



$5x - 8$

$3x - 8$

$2(3x) = 2(5x - 8)$

$6x = 10x - 16$

$0 = 4x - 16$

$\frac{16}{4} = \frac{4x}{4}$

$x = 4$

**P = 48**

23. Find the perimeter of the square.



$10x$

$20$

$6x + 8$

$2(6x + 8) = 2(10x)$

$12x + 16 = 20x$

$\frac{16}{8} = \frac{8x}{8}$

$x = 2$

**P = 40**