

Checking for Solution

$$1) \quad x + 9 = 10 \quad \text{Domain } \{1, 2, 3, 4\}$$

$$1 + 9 = 10 \quad \text{True}$$

$$2 + 9 \neq 10 \quad \text{False}$$

$$3 + 9 \neq 10 \quad \text{False}$$

$$4 + 9 \neq 10 \quad \text{False}$$

$$\begin{array}{r} 3) \quad x - 5 = 5 - x \\ \quad +x \quad \quad +x \\ \hline 2x - 5 = 5 \\ \quad +5 \quad +5 \\ \hline 2x = 10 \\ \quad \emptyset \end{array}$$

Domain $\{\cancel{x}, 1, 2, \cancel{3}, 4\}$

$$\begin{array}{l} 2(1) = 2 \\ 2(2) = 4 \end{array}$$

$$\begin{array}{l} 2(3) = 6 \\ 2(4) = 8 \end{array}$$

$$\begin{array}{r} 5) \quad 2x + 3 = 7 \\ \quad \quad -3 \quad -3 \\ \hline \quad \quad 2x = 4 \end{array}$$

$$\text{Domain } \{x, 2, 3, x\}$$

$$\begin{array}{r} 7) \quad x - x = 0 \\ \quad \quad 0 = 0 \end{array}$$

True
many solution

$$\text{Domain } \{-2, -1, 0, 1, 2\}$$

$$-2 - (-2) = 0$$

$$-2 + 2 = 0$$

$$a) x + x = -4 \quad \text{Domain } \{-2, -1, 0, 1, 2\}$$
$$2x = -4 \quad 2(-2) = -4$$

$$2a) \frac{(2x+3)}{5} = 3 \quad \text{Domain } \{2, 4, 6, 8\}$$
$$\frac{2(2)+3}{5} = \frac{7}{5} \quad \frac{2(4)+3}{5} = \frac{11}{5}$$

$$\frac{2(6)+3}{5} = \frac{15}{5} = 3$$

$$21) (2x)^2 = x \quad \text{Domain } \{ \cancel{x}, 1, 0, 1, 2 \}$$
$$4x = x$$
$$4(-2) = -8 \quad \uparrow$$

$$4(0) = 0$$

$$19) 3x - 1 = 11 \quad \text{Domain } \{ \cancel{x}, \cancel{x}, \cancel{x}, 4 \}$$
$$3(4) - 1 = 11$$

$$21) \frac{x}{x} = x \quad \text{Domain } \{1, 2, 3, 4\}$$
$$1 = x$$

$$23) \frac{12}{(x-1)} = 4 \quad \text{Domain } \{1, 2, 3, 4\}$$
$$\frac{12}{(4-1)} = \frac{12}{3} = 4$$

$$8) \quad x - x = 10 \quad \text{Domain} \quad \{\cancel{x}, \cancel{x}, \cancel{x}, \cancel{x}\}$$

$$0 = 10$$

$$\emptyset$$

$$24) \quad \frac{15}{(x+2)} = 5 \quad \text{Domain} \quad \{\cancel{0}, 2, 3, 4\}$$

$$\frac{15}{(1+2)} = \frac{15}{3} = 5$$

$$16) \quad 9x = -27 \quad \text{Domain } \{-3, -2, -1, 0, 1\}$$
$$9(-3) = -27$$

$$12) \quad 8x = -16 \quad \text{Domain } \{0, 1, 2, 3, 4\}$$
$$\emptyset$$