

**Solve the equation.**

1.  $\frac{a}{4} - 6 = -14$

2.  $6r - 12 = 6$

3.  $-36 = 7y + 2y$

3.  $-36 = 9y$

4. The output of a function is 9 less than 3 times the input.

Write an equation for the function and then find the input when the output is  $-6$ .

$$-6 = 3x - 9$$

5. A bank charges \$5.00 per month plus \$.30 per check for a standard checking account. Find the number of checks Justine wrote if she paid \$8.30 in fees last month.

$$\begin{array}{r} 8.30 = 5.00 + .30x \\ -5.00 \quad -5.00 \end{array}$$

$$\begin{array}{r} 3.30 = .30x \\ \hline 11 = x \end{array}$$

$$1. \frac{a}{4} - 6 = -14$$

$$\begin{array}{r} +6 \quad +6 \\ \hline 4 \cdot \frac{a}{4} = -8 \cdot 4 \end{array}$$

$$a = -32$$

$$2. 6r - 12 = 6$$

$$\begin{array}{r} +12 \quad +12 \\ \hline 6r = 18 \end{array}$$

$$r = 3$$

$$y = -4$$

Solve multi-step problems.

Solve an equation by combining like terms

Solve  $8x - 3x - 10 = 20$ .

$$\begin{array}{r} \checkmark \\ 5x - 10 = 20 \\ +10 \quad +10 \\ \hline 5x = 30 \\ x = 6 \end{array}$$

Solve  $9x + 1x - 7 = 13$



$$10x - 7 = 13$$

$$+7 \quad +7$$

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$$10x = 20$$

$$x = 2$$

Solve  $9d - 2d + 4 = 32$ .



$$7d + 4 = 32$$

$$\begin{array}{r} -4 \quad -4 \\ \hline \end{array}$$

$$7d = 28$$

$$d = 4$$

Solve an equation using the distributive property

Solve  $7x + 2(x + 6) = 39$ .

$$7x + 2x + 12 = 39$$

$$9x + 12 = 39$$

$$\begin{array}{r} -12 \quad -12 \\ \hline \end{array}$$

$$9x = 27$$

$$\boxed{x = 3}$$

Solve  $4x - 7(x - 2) = 26$ .

$$4x + -7(x - 2) = 26$$

$$4x + -7x + 14 = 26$$

$$-3x + 14 = 26$$

$$\begin{array}{r} -14 \quad -14 \\ \hline \end{array}$$

$$-3x = 12$$

$$\boxed{x = -4}$$

Solve  $2w + 3(w + 4) = 27$ .

$$2w + 3w + 12 = 27$$



$$5w + 12 = 27$$

$$-12 \quad -12$$



$$5w = 15$$

$$w = 3$$

Solve  $6x - 2(x - 5) = 46$ .

$$6x + -2(x + -5) = 46$$

$$6x + -2x + 10 = 46$$

$$4x + 10 = 46$$

$$\begin{array}{r} -10 \\ -10 \end{array}$$

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$$4x = 36$$

$$\boxed{x = 9}$$

### 3.3b Solve equations using the reciprocal.

Solve  $\frac{3}{2}(3x + 5) = -24$ .

$$\begin{aligned} \cancel{\frac{2}{2}} \cdot \cancel{\frac{3}{2}} (3x + 5) &= \overset{8}{\cancel{-24}} \cdot \cancel{\frac{1}{2}} \quad | \cdot \frac{2}{3} \\ 3x + 5 &= \overset{8}{-16} \\ \underset{-5}{-5} &\quad \underset{+5}{+5} \\ \hline 3x &= -21 \\ \boxed{x = -7} \end{aligned}$$

Solve the equation. Check your solution.

$$4. \frac{3}{4}(z - 6) = 12$$

$$\cancel{\frac{3}{4}} (\cancel{z - 6}) = \cancel{12} \cdot \cancel{4}$$

$$z - 6 = 16$$

$$\begin{array}{r} +6 \\ +6 \end{array}$$

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$$z = 22$$

Solve the equation. Check your solution.

$$5. \frac{2}{5}(3r + 4) = 10$$

$$\cancel{\frac{2}{5}} \cdot \frac{2}{5} (3r + 4) = \cancel{\frac{10}{5}} \cdot \frac{5}{1}$$

$$3r + 4 = 25$$

$$\frac{-4}{-4} \quad \frac{-4}{-4}$$

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$$3r = 21$$

$$\boxed{r = 7}$$

Solve the equation. Check your solution.

$$6. -\frac{4}{5}(4a - 1) = 28$$

$$\cancel{\frac{4}{5}}(4a - 1) = \cancel{28} \ominus \cancel{\frac{4}{5}}$$

$$4a - 1 = -35$$

$$+1 \quad +1$$

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$$4a = -34$$

$$a = -8.5$$

Joe drove 405 miles in 7 hours. He drove at a rate of 55 miles per hour during the first part of the trip and 60 miles per hour during the second part. How many hours did he drive at a rate of 55 miles per hour?

405 miles (total)

7 hrs (total)

55 mph (1<sup>st</sup>)

60 mph (2<sup>nd</sup>)

$x = \# \text{ hrs @ } 55 \text{ mph}$

$$55x + 60(7-x) = 405$$

$$55x + 420 - 60x = 405$$

$$\begin{array}{r} -5x + 420 = 405 \\ -420 \quad -420 \\ \hline \end{array}$$

$$\boxed{x = 3 \text{ hrs}} \quad -5x = -15$$

Homework:

p 150

#'s 1, 4-30 even, 38-40, 48-56 even