

1.4 Rewrite Formulas and Equations

pp. 26–32

EXAMPLE


 Solve $5x - 11y = 7$ for y . Then find the value of y when $x = 4$.

$$\begin{aligned} \text{STEP 1} \quad 5x - 11y &= 7 && \text{Write original equation.} \\ -11y &= 7 - 5x && \text{Subtract } 5x \text{ from each side.} \\ y &= -\frac{7}{11} + \frac{5}{11}x && \text{Divide each side by } -11. \end{aligned}$$

$$\begin{aligned} \text{STEP 2} \quad y &= -\frac{7}{11} + \frac{5}{11}(4) && \text{Substitute 4 for } x. \\ y &= \frac{13}{11} && \text{Simplify.} \end{aligned}$$

EXERCISES

 Solve the equation for y . Then find the value of y for the given value of x .

25. $10x + y = 7$; $x = 3$ 26. $8y - 3x = 18$; $x = 2$ 27. $xy - 6y = -15$; $x = 5$
 28. $4x = 6y + 9$; $x = 9$ 29. $5x - 2y = 10$; $x = -6$ 30. $x - 3xy = 1$; $x = -5$
31.  **GEOMETRY** The formula $S = 2\pi rh + 2\pi r^2$ gives the surface area S of a cylinder with height h and radius r . Solve the formula for h . Find h if $r = 5$ centimeters and $S = 400$ square centimeters.

EXAMPLES
2, 3, and 4
 on pp. 27–28
 for Exs. 25–31

1.5 Use Problem Solving Strategies and Models

pp. 34–40

EXAMPLE

Find the time it takes to drive 525 miles at 50 miles per hour.

Distance (miles)	=	Rate (miles/hour)	·	Time (hours)
↓		↓		↓
525	=	50	·	t

$$525 = 50t \quad \text{Write equation.}$$

$$10.5 = t \quad \text{Divide each side by 50.}$$

► It takes 10.5 hours to drive 525 miles at 50 miles per hour.

EXERCISES

32. **AVERAGE SPEED** It takes 3 hours for a train to travel 175 miles. What is the average speed of the train?
33. **CAR RENTAL** While on vacation, your family rented a car for \$293. The car rental cost \$180, plus \$.25 for every mile driven over 150 miles. How many miles did you drive while on vacation?

EXAMPLES
1 and 4
 on pp. 34–36
 for Exs. 32–33