

Self-Check for Tutorial 10

Solving One-Step Literal Equations

1. $A = \ell w$

Area (A) of a rectangle =
length (ℓ) of rectangle x
width (w) of rectangle

$$A = 144 \text{ cm}^2$$

ℓ is unknown

$$w = 9 \text{ cm}$$

Solve the equation for ℓ .

Use the given
measurements to determine
the value of ℓ .

3. $d = rt$

distance =
average rate of speed x time

$$d = 467.5 \text{ miles}$$

$$r = 55 \text{ miles per hour}$$

t is unknown

Solve the equation for t .

Use the given information to
determine the value of t .

2. $I = Prt$

Simple interest (I) = amount invested
(P) x number of time periods (t)

I = simple interest of an
investment = \$1155

P = amount invested

r = interest rate = 3%

t = number of

time periods = 7 years

Solve the equation for P.

Use the given information to
determine the value of P.

4. $V = \pi r^2 h$

Volume of a cylinder =
 π x radius² x height

$$\pi \approx 3.14$$

r = radius of the cylinder = 6 in.

h = height of the cylinder

$$V \approx 904.32 \text{ in}^3$$

Solve the equation for h .

Use the given measurements to
determine the value of h .

Self-Check for Tutorial 10

Solutions to Solving One-Step Literal Equations

1. $A = \ell w$

$$A = 144 \text{ cm}^2$$

ℓ is unknown

$$w = 9 \text{ cm}$$

Solve the equation for ℓ .

$$\ell = \frac{A}{w}$$

Use the given

measurements to determine the value of ℓ .

$$\ell = \frac{144 \text{ cm}^2}{9 \text{ cm}} = 16 \text{ cm}$$

3. $d = rt$

d = distance = 467.5 miles

r = average rate of

speed = 55 miles per hour

t = time

Solve the equation for t .

$$t = \frac{d}{r}$$

Use the given information to determine the value of t .

$$t = \frac{467.5 \text{ mi}}{55 \text{ mph}} = 8.5 \text{ hrs}$$

2. $I = Prt$

$$I = \$1155$$

P = amount invested

r = interest rate = 3%

t = number of time periods = 7 years

Solve the equation for P .

$$P = \frac{I}{rt}$$

Use the given information to determine the value of P .

$$P = \frac{\$1155}{0.03 \cdot 7} = \frac{\$1155}{0.21} = \$5500$$

4. $V = \pi r^2 h$

V = volume of a cylinder $\approx 904.32 \text{ in.}^3$

$\pi \approx 3.14$

r = radius of the cylinder = 6 in.

h = height of the cylinder

Solve the equation for h .

$$h = \frac{V}{\pi r^2}$$

Use the given measurements to determine the value of h .

$$h = \frac{904.32 \text{ in}^3}{3.14 \cdot (6 \text{ in})^2} = \frac{904.32 \text{ in}^3}{3.14 \cdot 36 \text{ in}^2} = \frac{904.32 \text{ in}^3}{113.04 \text{ in}^2} = 8 \text{ in}$$