

## Self-Check for Tutorial 11

### Solving Multiple-Step Literal Equations

1.  $P = 2\ell + 2w$

$P$  = perimeter of

a rectangle = 250 cm

$\ell$  = length of a rectangle = 20 cm

$w$  = width of a rectangle

Solve the equation for  $w$ .

Use the given information to find the value of  $w$ .

3.  $SA = 2\pi rh + 2\pi r^2$

$SA$  = surface area of

a cylinder = 75.36 m<sup>2</sup>

$\pi \approx 3.14$

$r$  = radius of cylinder = 2 m

$h$  = height of cylinder

Solve the equation for  $h$ .

Use the given information to find the value of  $h$ .

2.  $A = \frac{\pi r^2 S}{360}$

$A$  = the area of a sector of a circle (pizza slice shape)  $\approx 16.7$  in.<sup>2</sup>

$\pi \approx 3.14$

$r$  = radius of circle

$S$  = angle measure of the sector = 30°

Solve the equation for  $r$ .

Use the given information to find the value of  $r$ .

4.  $S = 180(n - 2)$

$S$  = sum of the measures of the interior angles of a polygon = 1620°

$n$  = number of sides of the polygon

Solve the equation for  $n$ .

Use the given information to find the value of  $n$ .

## Self-Check for Tutorial 11

### Solutions to Solving Multiple-Step Literal Equations

1.  $P = 2\ell + 2w$

$P$  = perimeter of  
a rectangle = 250 cm  
 $\ell$  = length of a rectangle = 20 cm  
 $w$  = width of a rectangle

Solve the equation for  $w$ .

$$w = \frac{P - 2\ell}{2} = \frac{1}{2}P - \ell$$

Use the given information to find the value of  $w$ .

$$w = 105 \text{ cm}$$

3.  $SA = 2\pi rh + 2\pi r^2$

$SA$  = surface area of a  
cylinder = 75.36 m<sup>2</sup>  
 $\pi \approx 3.14$   
 $r$  = radius of cylinder = 2 m  
 $h$  = height of cylinder

Solve the equation for  $h$ .

$$h = \frac{SA - 2\pi r^2}{2\pi r} = \frac{SA}{2\pi r} - r$$

Use the given information to find the value of  $h$ .

$$h \approx 5.99688 - 2$$

$$h \approx 4 \text{ m}$$

2.  $A = \frac{\pi r^2 S}{360}$

$A$  = the area of a sector of a  
circle (pizza slice shape)  $\approx 16.7 \text{ in.}^2$   
 $\pi \approx 3.14$   
 $r$  = radius of circle  
 $S$  = angle measure  
of the sector = 30°

Solve the equation for  $r$ .

$$r = \sqrt{\frac{360A}{\pi S}}$$

Use the given information to find the value of  $r$ .

$$r \approx 7.98682$$

$$r \approx 8 \text{ in.}$$

4.  $S = 180(n - 2)$

$S$  = sum of the measures  
of the interior angles  
of a polygon = 1620°  
 $n$  = number of sides  
of the polygon

Solve the equation for  $n$ .

$$n = \frac{S + 360}{180} = \frac{S}{180} + 2$$

Use the given information to find the value of  $n$ .

$$n = 11 \text{ sides}$$