What you will learn about:
Solve Formula for Specific Variable

Jamal rides his bike at a uniform rate of 12 miles per hour for $3 \frac{1}{2}$ hours. What distance has he traveled?

$$d = rt$$

$$d = (12 \text{ mph})(3.5 \text{ hr})$$

$$d = 42 \text{ mi}$$

Rey is planning to drive from his house in San Diego to visit his grandmother in Sacramento, a distance of 520 miles. If he can drive at a steady rate of 65 miles per hour, how many hours will the trip take?

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

$$t = \frac{520}{65}$$

$$t = 8 \text{ hrs}.$$  

Sarah is 168 miles from Chicago. If she needs to be in Chicago in 3 hours, at what rate does she need to drive?

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

$$r = \frac{168}{3}$$

$$r = 56 \text{ mi/hr}$$

Solve the formula $d = rt$, for $t$

When $d = 520$ and $r = 65$

$$t = \frac{d}{r} = \frac{520}{65}$$

$$t = 8 \text{ hr}$$
Solve the formula $d = rt$, for $r$
When $d = 180$ and $t = 4$

in general

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

$r = \frac{180}{4}$

$r = 45 \text{ m/h}$

Solve the formula $A = \frac{1}{2}bh$ for $h$
When $A = 90$ and $b = 15$

in general

$2A = \left(\frac{1}{2}bh\right)$

$h = \frac{2 \times 90}{15} = \frac{180}{15}$

$h = 12$

Solve the formula $A = \frac{1}{2}bh$ for $b$
When $A = 62$ and $h = 31$

in general

$b = \frac{2A}{h} = \frac{2 \times 62}{31} = 4$

Solve the formula $I = Prt$ to find the principle, $P$
When $I = 5600$, $r = 4\%$, $t = 7$ years

in General

$P = \frac{I}{rt} = \frac{5600}{(0.04)(7)} = \frac{5600}{0.28} = 20,000$

$P = \$20,000$
Solve the formula \( I = Prt \) to find the principle, \( P \)

When \( I = \$2,160, r = 6\%, t = 3 \) years

In General

\[
P = \frac{I}{rt} = \frac{2160}{(0.06)(3)} = \frac{2160}{0.18}
\]

\[
P = 12,000
\]

Solve the formula \( 3x + 2y = 18 \) for \( y \):

When \( x = 4 \)

in general

\[
3x + 2y = 18
\]

\[
-3x
\]

\[
2y = 18 - 3x
\]

\[
y = \frac{18 - 3x}{2}
\]

\[
= 9 - \frac{3x}{2}
\]

Solve the formula \( 3x + 4y = 10 \) for \( y \):

When \( x = \frac{14}{3} \)

in general

\[
3x + 4y = 10
\]

\[
4y = 10 - 3x
\]

\[
y = \frac{10 - 3x}{4}
\]

\[
= \frac{10 - 14}{y} = \frac{-4}{4} = -1
\]

Solve the formula \( P = a + b + c \) for \( a \).

\[
a = P - b - c
\]

\[
= P - (b + c)
\]