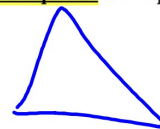


4. The perimeter of a rectangle is 46 cm. The length is one less than twice the width. Write and solve an equation to find the dimensions (length and width) of the rectangle.

$$\begin{aligned}
 2(2w-1) + 2w &= 46 & P &= 2l + 2w \\
 4w - 2 + 2w &= 46 & L &= 15 \\
 6w - 2 &= 46 \\
 +2 & +2 \\
 6w &= 48 \\
 \textcircled{w=8}
 \end{aligned}$$

Section 2-6: Formulas

A **literal equation** is an equation involving two or more variables. Formulas are special types of literal equations.



$$\begin{aligned}
 d &= vt \\
 \frac{d}{t} &= \frac{vt}{t} \\
 v &= \frac{d}{t}
 \end{aligned}$$

1. Solve for Q

$$\frac{17 = 23Q}{23} \quad Q = \frac{17}{23}$$

1. Solve for L

$$\begin{aligned}
 A &= LW \\
 \frac{A}{W} &= \frac{LW}{W} \\
 L &= \frac{A}{W}
 \end{aligned}$$

Don't use a calculator!

2. Solve for W

$$\begin{aligned}
 13 &= 5W + \sqrt{3} \\
 \frac{13 - \sqrt{3}}{5} &= \frac{5W + \sqrt{3} - \sqrt{3}}{5} & \frac{13 - \sqrt{3}}{5} &= W
 \end{aligned}$$

2. Solve for b

$$\begin{aligned}
 y &= mx + b \\
 -mx &-mx \\
 b &= y - mx
 \end{aligned}$$

3. Solve for h $2 \cdot A = \frac{1}{2}bh \cdot 2$

$$\frac{2A}{b} = \frac{bh}{b}$$

$$h = \frac{2A}{b}$$

$$d = vt$$

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

4. Solve for t $\frac{I}{pr} = \frac{prt}{pr}$

$$t = \frac{I}{pr}$$

5. Solve for x_1 $2 \cdot M = \frac{x_1 + x_2}{2} \cdot 2$

$$2M = x_1 + \cancel{x_2}$$

$$2M - \cancel{x_2} = x_1$$

6. Solve for y $\frac{Ax + By}{-Ax} = \frac{C - Ax}{-Ax}$

$$By = C - Ax$$

$$y = \frac{C - Ax}{B}$$

7.) Solve for A

$$A + R = 5(C - 2A)$$

$$\begin{aligned} A + R &= 5C - 10A \\ + 10A & \\ \hline 11A + R &= 5C \\ 11A + R &= 5C \\ - R & \\ \hline 11A &= 5C - R \\ A &= \frac{5C - R}{11} \end{aligned}$$

8.) Solve for N

$$N + Q = B(K - RN)$$

$$\begin{aligned} N + Q &= BK - BRN \\ N + BRN &= BK - Q \\ \frac{N(1 + BR)}{1 + BR} &= \frac{BK - Q}{1 + BR} \\ N &= \frac{BK - Q}{1 + BR} \end{aligned}$$

9.) Solve for W

$$K = R + M(W - A)$$

$$\begin{aligned} K &= R + MW - MA \\ K - R + MA &= MW \\ W &= \frac{K - R + MA}{M} \end{aligned}$$

10.) Solve for K

$$A = B + \frac{K - R}{E}$$

$$\begin{aligned} -B - B & \quad E \cdot A - B = \frac{K - R}{E} \cdot E \\ E(A - B) &= K - R \\ E(A - B) + R &= K \end{aligned}$$

1.) **Construction** Bricklayers use the formula $N = 7LH$ to estimate the number of bricks N needed to build a wall of height H and length L .

a. Solve the equation for H .

b. What is the height of a wall that is 30 feet long and that requires 2310 bricks to build?

$$\begin{aligned} \text{a.) } \frac{N}{7L} &= \frac{7LH}{7L} & \boxed{H = \frac{N}{7L}} \\ \text{b.) } H &= \frac{2310}{7(30)} = H = \frac{2310}{210} \\ & \boxed{H = 11} \end{aligned}$$

2.) Suppose that the amount in an account, 3 years after a principal of \$5000 was invested, is \$6050. What was the interest rate?

From our previous example,

$$\boxed{7\%} \quad A = P + Prt \quad (1)$$

where A is the amount in the account, P is the principal, r is the interest rate, and t is the time in years that the money has been invested. By the result of Example 3 we have

$$\begin{aligned} r &= \frac{6050 - 5000}{5000 \cdot 3} \\ &= 0.07 \end{aligned} \quad \begin{aligned} A - P &= Prt \\ \frac{A - P}{Pt} &= r \end{aligned}$$

3.) Suppose that the amount in an account, 4 years after a principal of \$3000 was invested, is \$3720. What was the interest rate?

$$\begin{aligned} \frac{A - P}{Pt} &= r = 0.06 \\ &= \boxed{6\%} \\ \frac{3720 - 3000}{3000 \cdot 4} &= r \end{aligned}$$

You can now finish Hwk #15 Sec 2-6

Pages 113-114 Due tomorrow

Problems 1-5, 7, 12, 24, 26, 31, 33, 35, 39

IXL #6 - J.7 & J.8 due Friday, Oct. 4th at 6pm!