

**EDUCATIONAL ASSIGNMENT for JOSEPH JOHN WUNDERLICH** for 11th grade

This assignment covers the following Educational Objectives (Subjects marked with a "■" are the main subject, and those marked with an "□" are secondary subjects):

- Geometry

*Solve the following problems. Use a pencil.*

**Simplify the ratio.**

1. 6 in.:28 in.

$$\frac{6 \text{ in.}}{28 \text{ in.}} \div 2 = \frac{3}{14} \div 3 = \frac{1}{4}$$

1 to 4
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2.  $\frac{18 \text{ cm}}{6 \text{ cm}}$

$$\frac{18}{6} \div 6 = \frac{3}{1}$$

3 to 1
--------

3.  $\frac{27 \text{ in.}}{3 \text{ ft}}$

$$\frac{27 \text{ in.}}{36 \text{ in.}} \div 9 = \frac{3}{4}$$

3 to 4
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**Solve the proportion.**

7.  $\frac{x}{2} = \frac{7}{14}$

$$x \cdot 14 = 2 \cdot 7$$

$$x \cdot 14 = 14$$

$$x = 1$$

8.  $\frac{5}{7} = \frac{y+1}{21}$

$$5 \cdot 21 = (y+1) \cdot 7$$

$$105 = \div 7$$

$$\div 7$$

$$15 = (y+1)$$

$$\begin{array}{r} -1 \\ 14 = y \end{array}$$

9.  $\frac{27}{x-5} = \frac{3}{2}$

$$27 \cdot 2 = (x-5) \cdot 3$$

$$54 = 3(x-5)$$

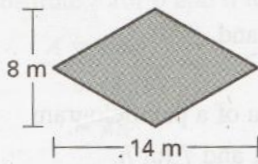
$$\div 3 \quad \div 3$$

$$18 = x - 5$$

$$23 = x$$

Find the area of the rhombus.

8.



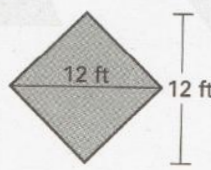
$$\frac{1}{2} \cdot 8m \cdot 14m$$

$$\frac{1}{2} \cdot 112$$

$$\boxed{56m}$$

$$\begin{array}{r} 14 \\ \times 8 \\ \hline 112 \\ 2 \overline{)112} \\ \underline{-104} \\ 12 \end{array}$$

10.



$$\frac{1}{2} \cdot 12 \cdot 12$$

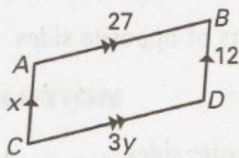
$$\frac{1}{2} \cdot 144$$

$$\boxed{72m}$$

$$\begin{array}{r} 72 \\ 2 \overline{)144} \\ \underline{-144} \\ 04 \end{array}$$

Find the values of x and y in the parallelogram.

1.

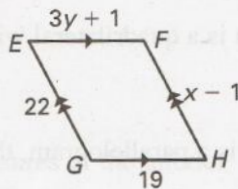


$$3y = 27 \quad x = 12$$

$$3 \div 3 \quad \downarrow$$

$$\boxed{y = 9, x = 12}$$

2.

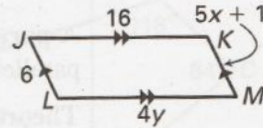


$$3y + 1 = 19 \quad x - 1 = 22$$

$$\begin{array}{r} 3y + 1 = 19 \\ \downarrow -1 \quad -1 \\ 3y = 18 \\ \div 3 \quad \div 3 \\ y = 6 \end{array} \quad \begin{array}{r} x - 1 = 22 \\ \downarrow +1 \quad +1 \\ x = 23 \end{array}$$

$$\boxed{y = 6, x = 23}$$

3.



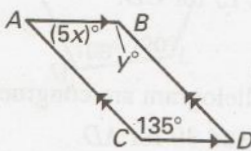
$$4y = 16 \quad 5x + 1 = 6$$

$$\begin{array}{r} 4y = 16 \\ \div 4 \quad \div 4 \\ y = 4 \end{array} \quad \begin{array}{r} 5x + 1 = 6 \\ \downarrow -1 \quad -1 \\ 5x = 5 \end{array}$$

$$\boxed{y = 4, x = 1}$$

Find the values of x and y in the parallelogram.

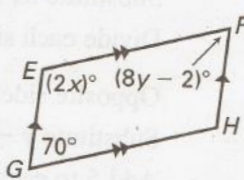
4.



$$\begin{array}{r} 180 \\ -135 \\ \hline 45 \\ \div 5 \\ \hline 9 \end{array}$$

$$\boxed{x = 9, y = 135}$$

5.



$$(2x)^\circ + (8y - 2)^\circ = 180^\circ$$

$$2x + 8y - 2 = 180$$

$$2x + 8y = 182$$

$$\begin{array}{r} 180 \\ -70 \\ \hline 110 \\ \div 2 \\ \hline 55 \end{array}$$

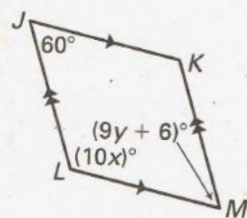
$$8y - 2 = 70$$

$$8y = 72$$

$$\begin{array}{r} 72 \\ \div 8 \\ \hline 9 \end{array}$$

$$\boxed{y = 9, x = 55}$$

6.



$$60^\circ + (9y + 6)^\circ = 180^\circ$$

$$9y + 6 = 120$$

$$9y = 114$$

$$\begin{array}{r} 180 \\ -60 \\ \hline 120 \\ \div 10 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 9y = 54 \\ \div 9 \\ \hline 6 \end{array}$$

$$\boxed{y = 6, x = 12}$$