

Geometry BELL WORK

Classify the relationship between each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.

1) $\angle 2$ and $\angle 10$

Corresponding

2) $\angle 9$ and $\angle 13$

corresponding

3) $\angle 3$ and $\angle 10$

consecutive interior

4) $\angle 7$ and $\angle 13$

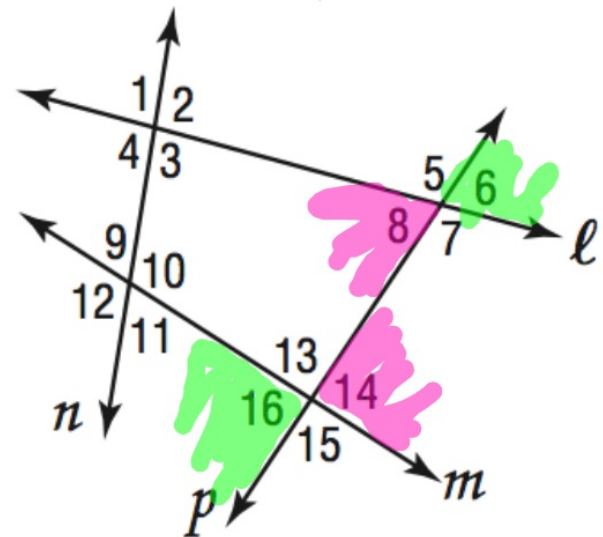
alternate interior

5) $\angle 6$ and $\angle 16$

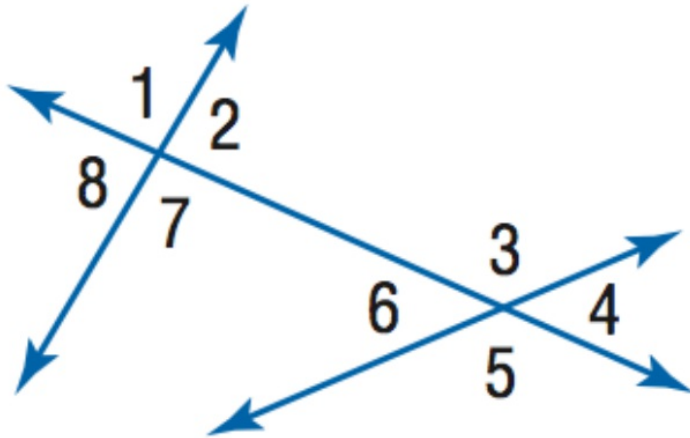
alt exterior

6) $\angle 8$ and $\angle 14$

alt interior



Refer to the figure below. Classify the relationship between each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.



$\angle 1$ and $\angle 5$

$\angle 6$ and $\angle 7$

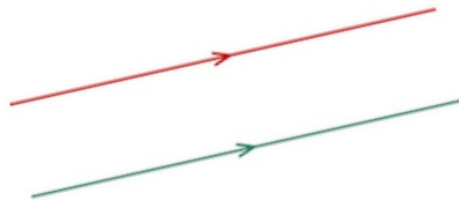
$\angle 2$ and $\angle 4$

$\angle 2$ and $\angle 6$

3.1 Parallel Lines and Transversals

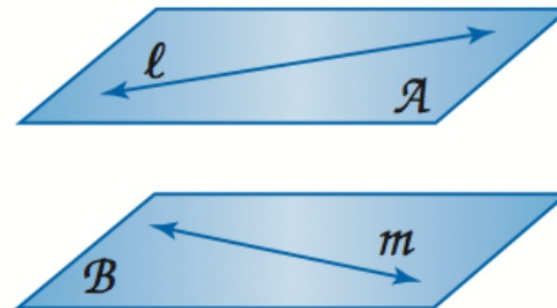
Relationships between lines and planes:

parallel lines: are coplanar, do not intersect



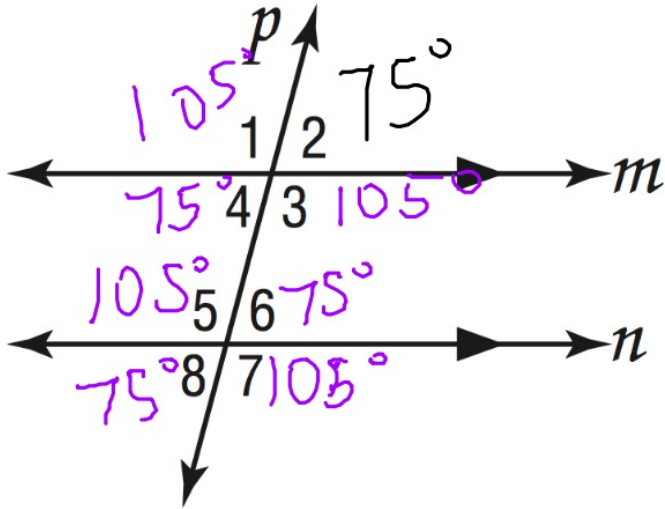
arrows are used to show that they're parallel

skew lines: are not coplanar, do not intersect



parallel planes: do not intersect

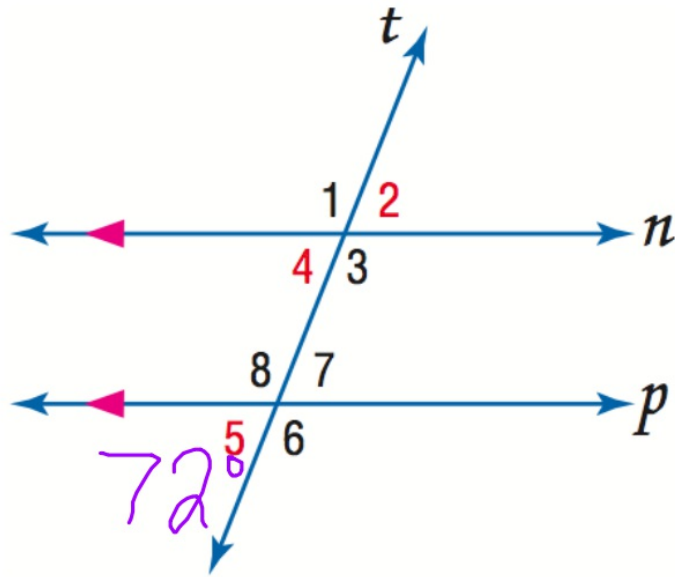
In the figure, $m\angle 2 = 75$. Find the measures of the remaining angles.



$$\begin{array}{r} 180 \\ - 75 \\ \hline 105 \end{array}$$

In the figure, $m\angle 5 = 72$. Find the measure of each angle.

How do you know?



a. $\angle 4$

72°

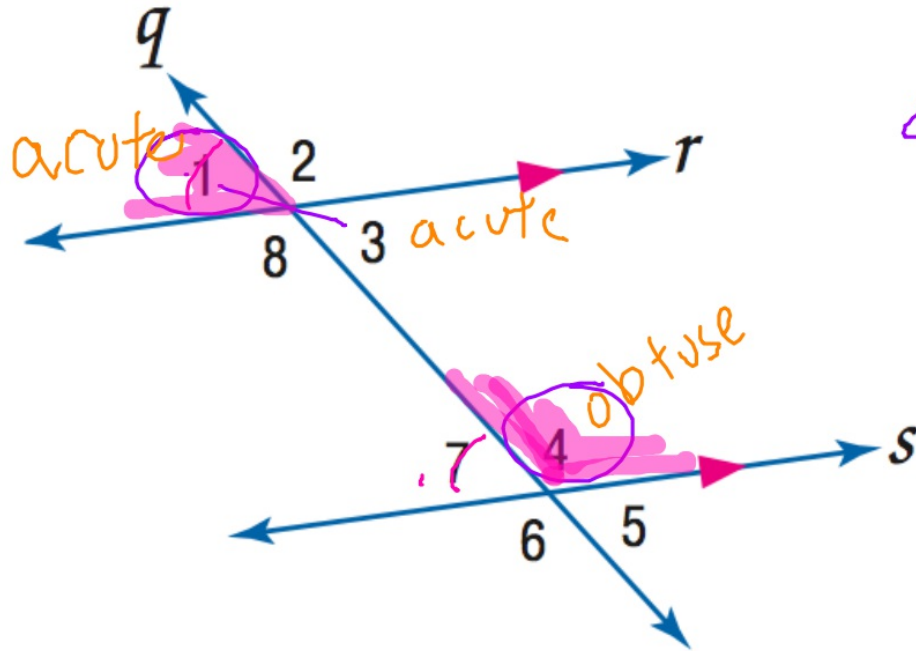
corresponding

b. $\angle 2$

72°

alt
exterior

If $m\angle 4 = 2x - 17$ and $m\angle 1 = 85$, find x .



$$\angle 1 + \angle 4 = 180^\circ$$

$$85 + 2x - 17 = 180$$

$$\begin{array}{r} \cancel{68} + 2x = 180 \\ - \cancel{68} \quad - 68 \\ \hline \end{array}$$

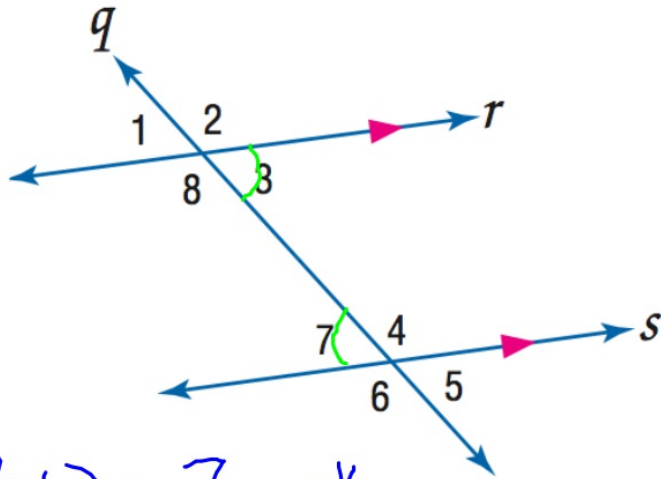
$$\frac{2x = 112}{2} \quad \frac{112}{2}$$

$$x = 56$$

$$\text{acute} + \text{obtuse} = 180^\circ$$

$$m\angle 4 = 180 - 85$$

Find y if $m\angle 3 = 4y + 30$ and $m\angle 7 = 7y + 6$.



Alt interior

$$\angle 3 \cong \angle 7$$

$$m\angle 3 = m\angle 7$$

$$4y + 30 = 7y + 6$$

$$\begin{array}{r} 4y + 30 = 7y + 6 \\ -4y \quad -6 \quad -4y \quad -6 \\ \hline 4y + 24 = 7y \end{array}$$

$$\begin{array}{r} 24 = 3y \\ \frac{24}{3} = \frac{3y}{3} \end{array} \quad y = 8$$

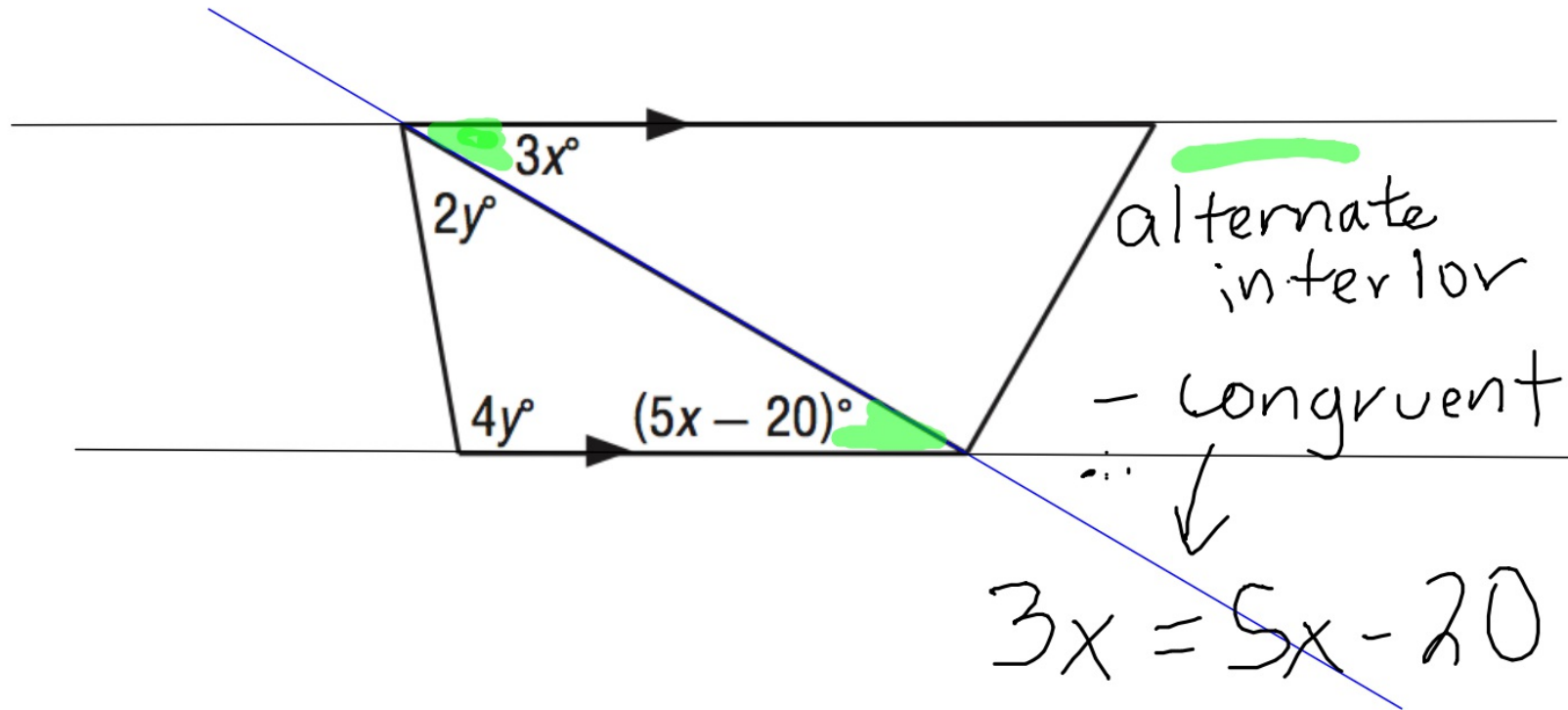
$$4y + 30 = 7y + 6$$

$$\begin{array}{r} 4y + 30 = 7y + 6 \\ -4y \quad -6 \quad -4y \quad -6 \\ \hline 30 = 3y + 6 \end{array}$$

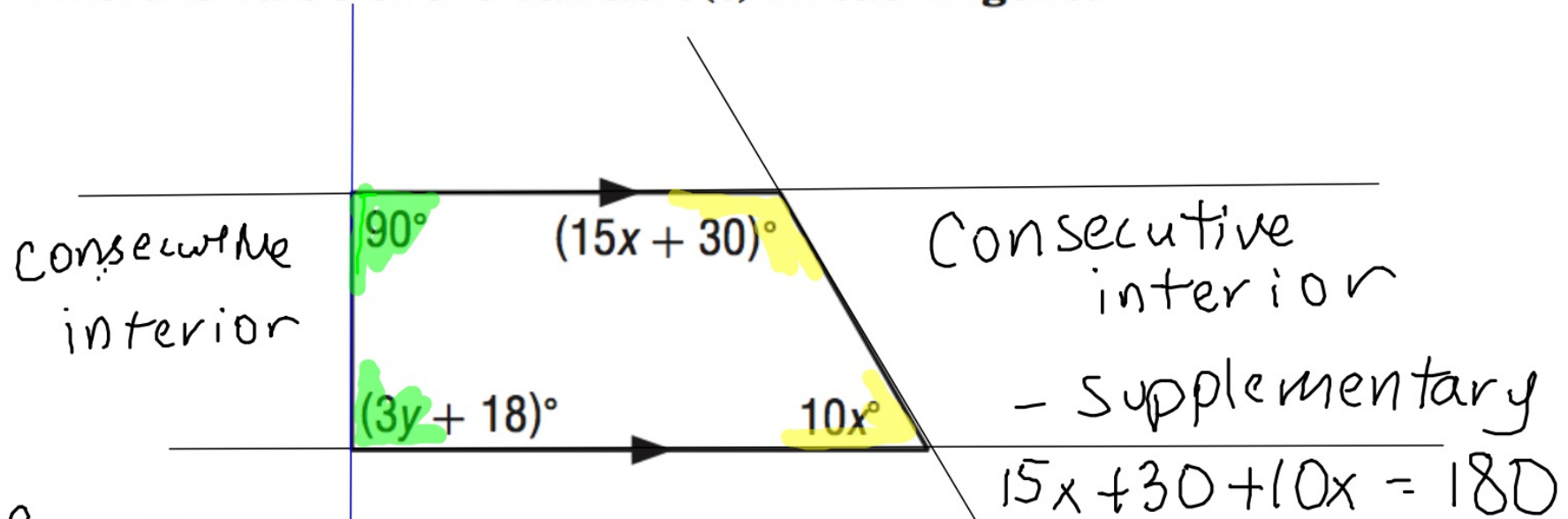
$$\begin{array}{r} 30 = 3y + 6 \\ -6 \quad -6 \\ \hline 24 = 3y \end{array}$$

$$\frac{24}{3} = \frac{3y}{3} \quad y = 8$$

Find the value of the variable(s) in each figure.



Find the value of the variable(s) in each figure.



$$\begin{array}{r} 90 + 3y + 18 = 180 \\ -90 \quad -90 \\ \hline \end{array}$$

$$\begin{array}{r} 3y + 18 = 90 \\ -18 \quad -18 \\ \hline \end{array}$$

$$\frac{3y}{3} = \frac{72}{3}$$

$y = 24$

$$15x + 30 + 10x = 180$$

$$\begin{array}{r} 25x + 30 = 180 \\ -30 \quad -30 \\ \hline \end{array}$$

$$\frac{25x}{25} = \frac{150}{25}$$

$x = 6$

Assignment:

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