Geometry BELL WORK

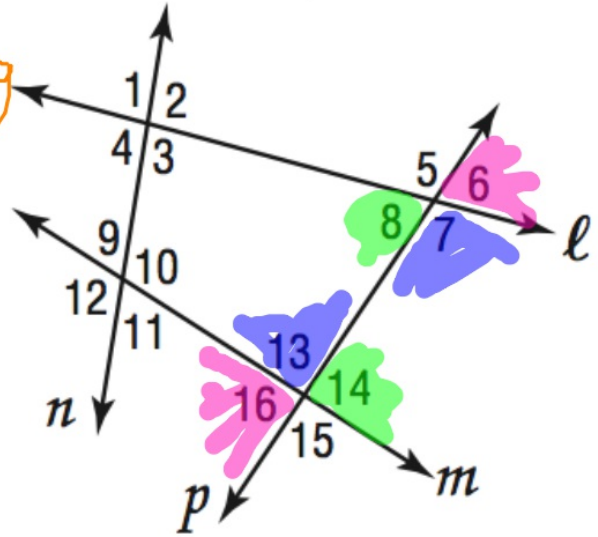
Classify the relationship between each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.

1) ∠2 and ∠10

corresponding

2) ∠9 and ∠13

corresponding



3) ∠3 and ∠10

consecutive interior

4) ∠7 and ∠13

alternate interior

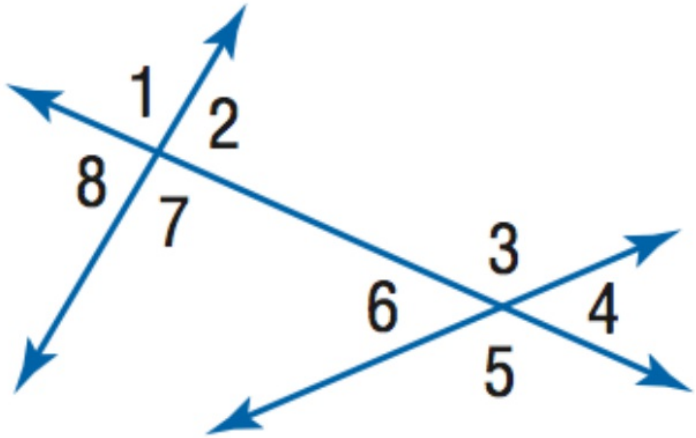
5) ∠6 and ∠16

alt exterior

6) ∠8 and ∠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.



∠1 and ∠5

∠6 and ∠7

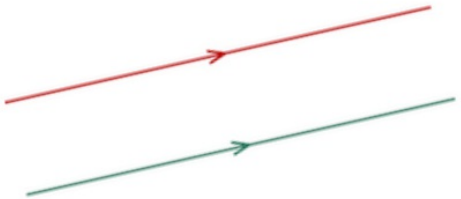
∠2 and ∠4

∠2 and ∠6

3.1 Parallel Lines and Transversals

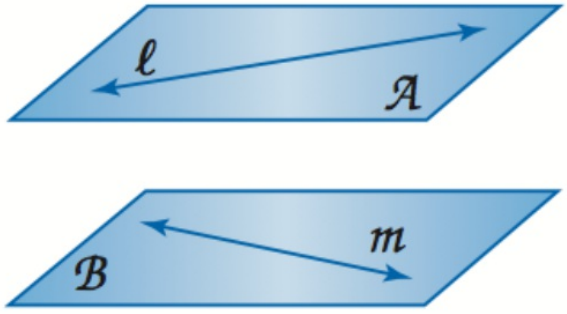
Relationships between lines and planes:

parallel lines: are coplanar, do not intersect



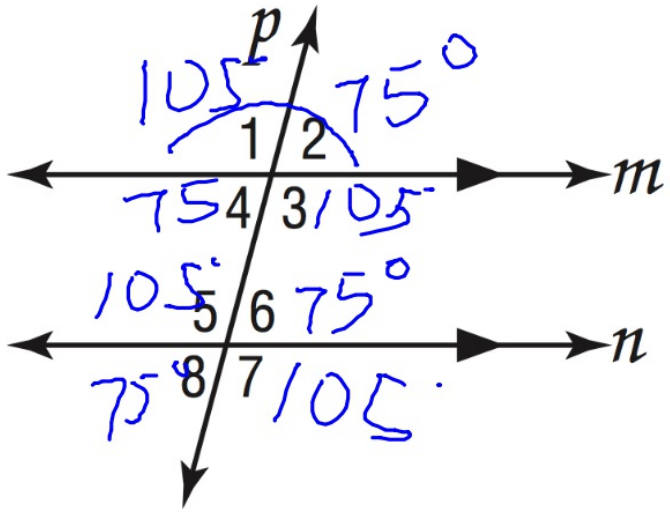
arrows are used to show that they're parallel

skew lines: are not coplanar, do not intesect



parallel planes: do not intersect

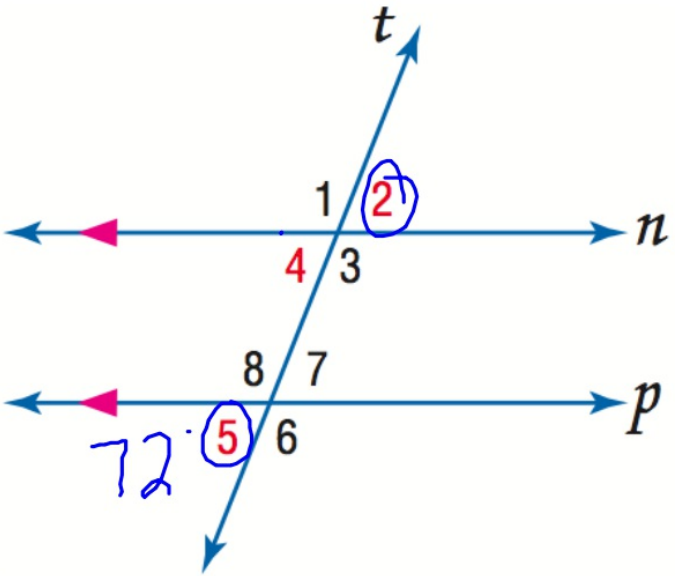
In the figure, $m\angle 2 = 75$. Find the measures of the remaining angles.



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

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

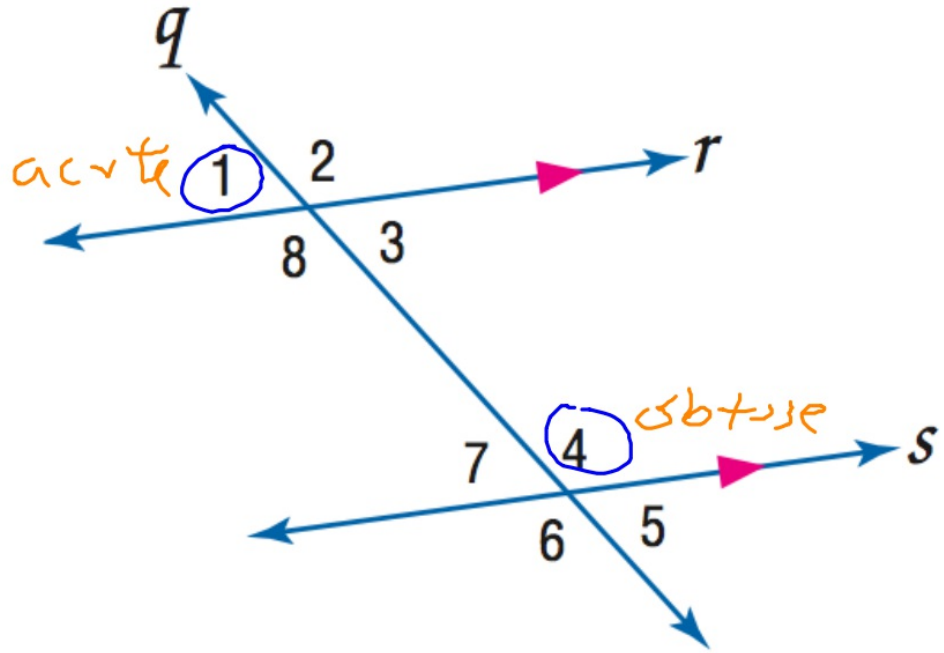
How do you know?



a. $\angle 4$ 72° Corresponding

b. $\angle 2$ 72° alternate exterior

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



$\angle 1 + \angle 4 = 180$

$85 + 2x - 17 = 180$

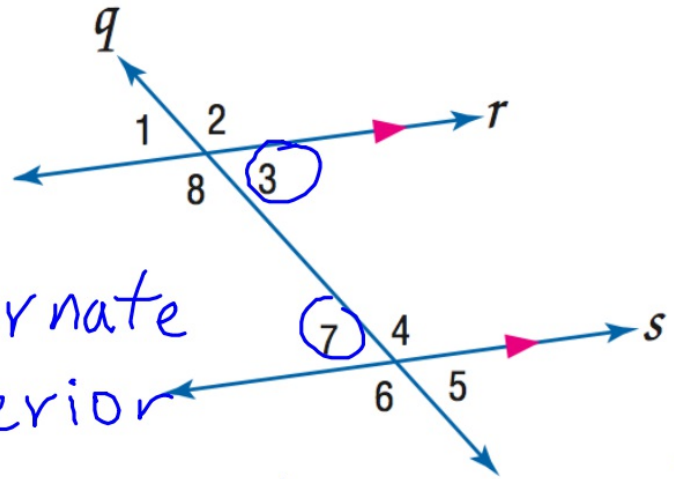
$68 + 2x = 180$

$-68 \quad -68$

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

$x = 56$

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



alternate interior - congruent

$m\angle 3 = m\angle 7$

$4y + 30 = 7y + 6$

$-4y \quad -4y$

$30 = 3y + 6$

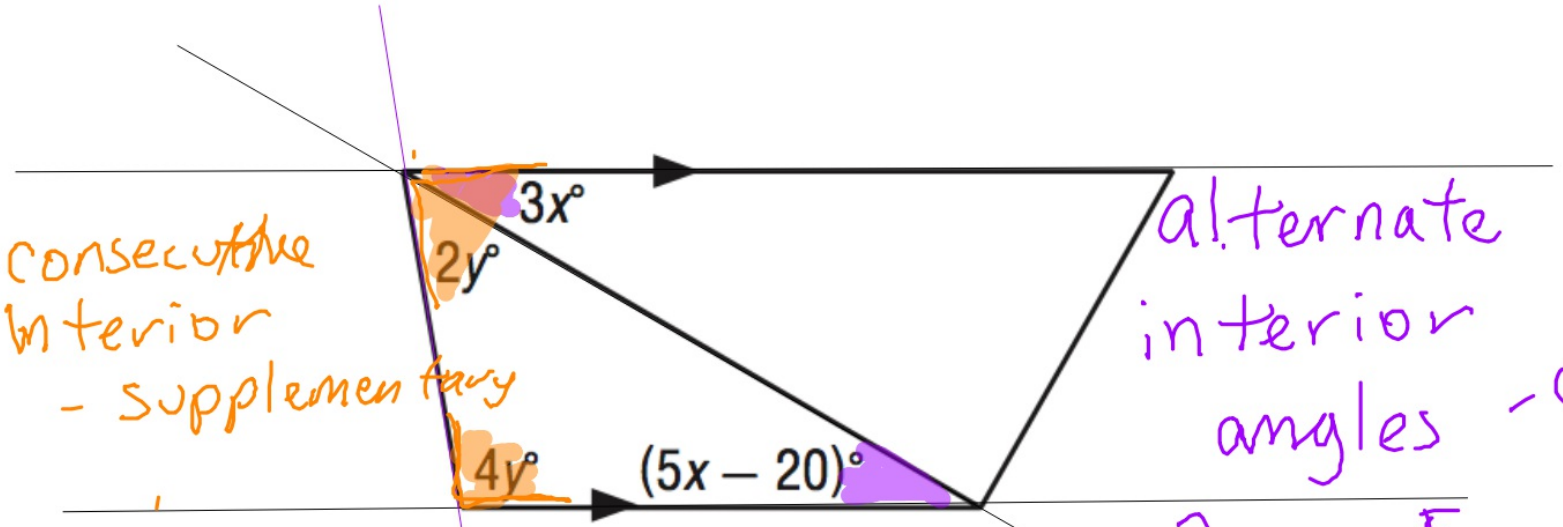
$-6 \quad -6$

$24 = 3y$

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

$y = 8$

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



consecutive interior - supplementary

alternate interior angles - congruent

$3x + 2y + 4y = 180$

$3(10) + 2y + 4y = 180$

$30 + 6y = 180$

$-30 \quad -30$

$6y = 150$

$y = 25$

$3x = 5x - 20$

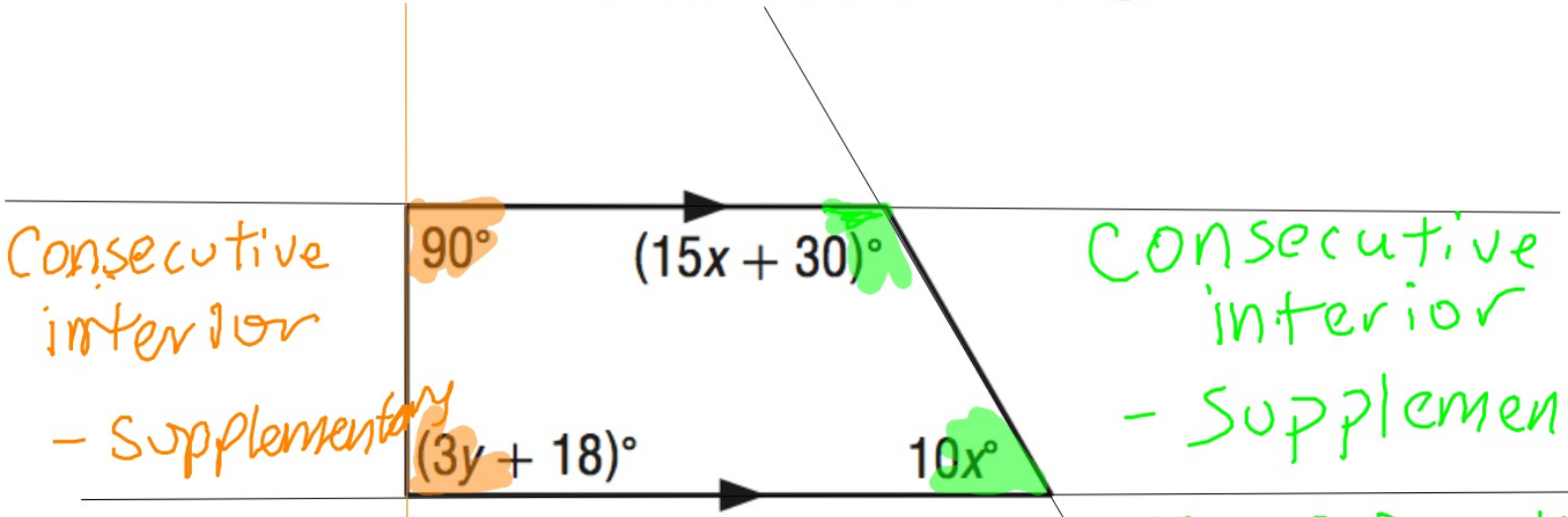
$-5x \quad -5x$

$-2x = -20$

$\frac{-2x}{-2} = \frac{-20}{-2}$

$x = 10$

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



Consecutive interior - supplementary

$90 + 3y + 18 = 180$

$-90 \quad -90$

$3y + 18 = 90$

$-18 \quad -18$

$3y = 72$

$y = 24$

Consecutive interior - supplementary

$15x + 30 + 10x = 180$

$25x + 30 = 180$

$-30 \quad -30$

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

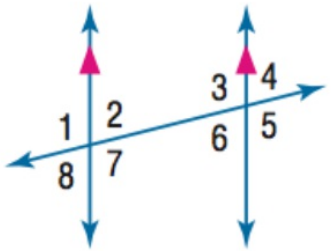
$x = 6$

Assignment:

3.2 pg. 181 # 1-10

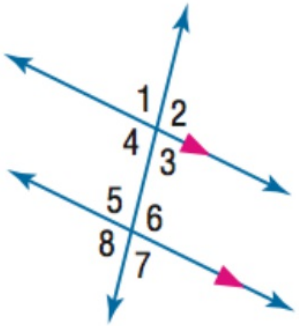
Due Monday!

In the figure, $m\angle 1 = 94$. Find the measure of each angle. Tell which postulate(s) or theorem(s) you used.



1. $\angle 3$ **2.** $\angle 5$ **3.** $\angle 4$

In the figure, $m\angle 4 = 101$. Find the measure of each angle. Tell which postulate(s) or theorem(s) you used.



4. $\angle 6$ **5.** $\angle 7$ **6.** $\angle 5$

7. ROADS In the diagram, the guard rail is parallel to the surface of the roadway and the vertical supports are parallel to each other. Find the measures of angles 2, 3, and 4.