7B All About Angles and Lines Name: _____ Per:_____

SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CREDIT. NO WORK IN PEN.

Use the figure to the right below to answer the following questions. In this figure **line *l* is parallel to line *m* and line *o* is perpendicular to line *m*. SYW.** Each question is independent from the others.

Example: If $\angle$ 11 and $\angle$ 13 are vertical angles (**the relationship**), the angles are **(congruent)**

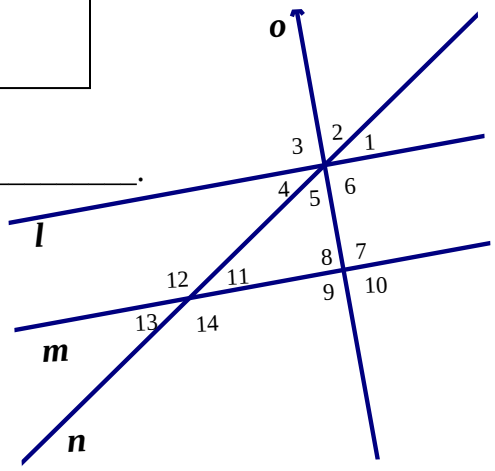
(So we know that $\angle 11$ *must equal* $\angle 13$). If $\angle$ 11 = [–3(2x – 5)]° and $\angle$ 13 = $(-14x - 17)°$.

a. What does x equal? ___-4___

b. What is the measure of $\angle$ 11? _39°__

c. What is the measure of $\angle$ 13? _39°__

$$-3(2x-5) = -14x - 17$$
$$-6x + 15 = -14x - 17$$
$$8x = -32$$
$$x = -4$$



1. If $\angle$ 13 and $\angle$ 14 are a _____ pair, together they = _____.

   If $\measuredangle 13 = (s-2)°$ and $\measuredangle 14 = (3s+2)°$,

   a. What does s equal? _____

   b. What is $\measuredangle 13$? _____

   c. What is $\measuredangle 14$? _____

2. If $\angle$ 5 and $\angle$ 4 are _____ angles together they = _____.

   If $\measuredangle 5 = (3b+12)°$ and $\measuredangle 4 = (2b-22)°$

   a. What does b equal? _____

   b. What is $\measuredangle 4$? _____ c. What is $\measuredangle 5$? _____

3. If $\angle$ 4 and $\angle$ 11 are _____ interior angles and so the angles are _____.

   If $\measuredangle 4 = [2(4p-3)-8]°$ and $\measuredangle 11 = (4+2p)°$.

   a. Solve for p. _____

   b. What is $\measuredangle 4$? _____ c. What is $\measuredangle 11$? _____

4. If $\angle$ 13 and $\angle$ 1 are alternate _____ angles and so they are _____.

   If $\measuredangle 13 = (-1+2g)]°$ and $\measuredangle 1 = (5g+4g-8)°$

   a. Solve for g. _____

   b. What is $\measuredangle 13$? _____ c. What is is $\measuredangle 1$? _____

5. If $\angle$ 4 and $\angle$ 12 are _____ _____ angles and so the angles are _____.

   If $\measuredangle 4 = (r - 4)^o$ and $\measuredangle 12 = (3r - 16)^o$.

   a. Solve for r. _____

   b. What is $\measuredangle 4$? _____ c. What is $\measuredangle 12$? _____

6. If $\angle$ 4 and $\angle$ 13 are _____ angles and so the angles are _____.

   If $\angle$ 4 = 3(2m + 1)^o and $\angle$ 13 = 4m –(m – 6)^o.

   a. Solve for m. _____

   b. What is $\measuredangle 4$? _____ c. What is $\measuredangle 13$? _____

7. From the figure on the front of the page, if $\angle$ 4 = $\angle$ 5, find and explain how you know.
   a. *m* $\angle$ 1 = _____°. _____
   b. *m* $\angle$ 12 = _____°. _____
   c. *m* $\angle$ 13 = _____°. _____

Extra Credit (Use image from the front page). If $\angle$ 14 is a corresponding angle to $\angle$ 5 and $\angle$ 6 where *m* $\angle$ 14 = [2(k + 40)]^o and *m* $\angle$ 5 = (k + 45)^o and *m* $\angle$ 6 = (2k + 15)^o.

Solve for k ____ What's $\measuredangle 14$?_____ What's $\measuredangle 5$?_____ What's $\measuredangle 6$?_____

For the following constructions, **use a compass and a straight edge only**. **Show all necessary markings**.

8. Construct a line segment **congruent** to the given line segm

9. Construct a line segment ***three times*** longer than the given segment.

10. Construct a line segment whose length is equal to the ***sum*** of the lengths of the given line segments.

11. Construct a line segment whose length is equal to the ***difference*** of the lengths of the given line segments.