

Monday, April 21, 2014 - Day

AIM

SWBAT review for the Math Assessment.

DO NOW

Read notes sheet

MRS.  
DISTLER

HW

Complete Common Core Assessment Review #1  
(Geometry)

Math Assessment: 4/30, 5/1, 5/2

You need a scientific calculator and #2 pencils

No Graphing Calculators allowed

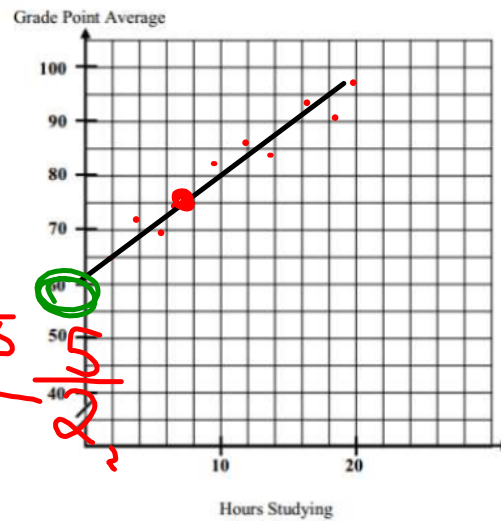


"Do Now"

A survey was done at Clarkstown North High School to determine the effect of time spent studying on a student's GPA. The table shows the results for 10 students randomly selected.

Study time (Hours per week)	2	4	5	7	10	12	14	17	19	20
GPA (out of 100)	64	71	69	74	81	86	84	94	91	96

- a) Create a scatter plot for this data on the graph provided.
- b) Draw a line of best fit for the scatterplot.
- c) Write the equation of the line of best fit using 2 points from the line you drew. Round the slope to the nearest tenth and the y-intercept to the nearest whole number.



$(8, 75)$        $(10, 80)$   
 $Y = mx + b$   
 SLOPE       $\frac{\Delta Y}{\Delta X} = \frac{80-75}{10-8} = \frac{5}{2}$

- d) Use your answer from part C to predict the expected GPA from studying 8 hours per week. Round your answer to the nearest whole number.

$m = \frac{5}{2}$        $b = 60$

$Y = \frac{5}{2}X + 60$

8, 75  
14, 85

$\frac{10}{6} = \frac{5}{3}$

$\frac{5}{2} \cdot 8$

$Y = \frac{10}{6}X + 60$

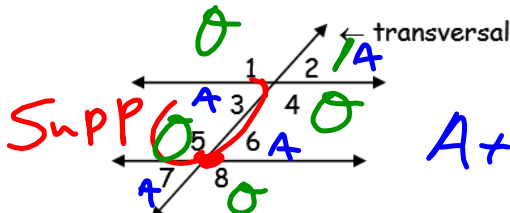
$\frac{80}{6}$

80

**Parallel Lines** - lines in the same plane that **DO NOT** intersect



**Transversal** - a line that intersects two lines to form eight angles



*"Os measure the same"*  
*"As"*  
*A + O = 180°*

**Interior Angles:**  $\angle 3, \angle 4, \angle 5, \angle 6$   
 (inside parallel lines)

**Exterior Angles:**  $\angle 1, \angle 2, \angle 7, \angle 8$   
 (outside parallel lines)

*diff sides*

**Alternate Interior Angles** - Interior angles found on opposite sides of the transversal. When two parallel lines are cut by a transversal the alternate interior angles are congruent. Examples:  $\angle 3$  &  $\angle 6, \angle 4$  &  $\angle 5$

**Alternate Exterior Angles** - Exterior angles found on opposite sides of the transversal. When two parallel lines are cut by a transversal the alternate exterior angles are congruent. Examples:  $\angle 1$  &  $\angle 8, \angle 2$  &  $\angle 7$

**Corresponding Angles** - angles that hold the same position on two different lines cut by the transversal. When two parallel lines are cut by a transversal the corresponding angles are congruent. Examples:  $\angle 1$  &  $\angle 5, \angle 2$  &  $\angle 6, \angle 3$  &  $\angle 7, \angle 4$  &  $\angle 8$

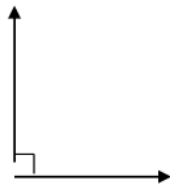
**Vertical Angles** - angles formed by the intersection of two lines. They are opposite each other and have congruent angle measurements. Examples:  $\angle 1$  &  $\angle 4, \angle 2$  &  $\angle 3, \angle 5$  &  $\angle 8, \angle 6$  &  $\angle 7$

**Supplementary Angles** - two angles whose sum is  $180^\circ$ . Supplementary angles form straight lines. Examples:  $\angle 1$  &  $\angle 2, \angle 3$  &  $\angle 4, \angle 5$  &  $\angle 6, \angle 7$  &  $\angle 8, \angle 3$  &  $\angle 1, \angle 4$  &  $\angle 2, \angle 7$  &  $\angle 5, \angle 8$  &  $\angle 6$

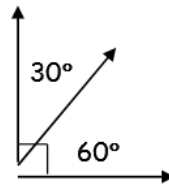
**Consecutive Interior Angles** - The pairs of angles on one side of the transversal but inside the two lines are called Consecutive Interior Angles. Consecutive Interior Angles are supplementary. Examples:  $\angle 4$  &  $\angle 6, \angle 3$  &  $\angle 5$

**Angle Relationships**

**Complementary Angles** - Two angles are complementary if the **SUM** of their angle measures is  $90^\circ$ . Complementary angles form corners (right angles).



Right angle



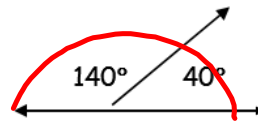
Adjacent **complementary angles**

$30^\circ$  and  $60^\circ$  angles are **complementary** because  $30^\circ + 60^\circ = 90^\circ$

**Supplementary Angles** - Two angles are supplementary if the **SUM** of their angle measures is  $180^\circ$ . Supplementary angles form straight lines.



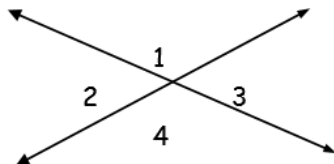
Line  $180^\circ$



Adjacent **supplementary angles**

$40^\circ$  and  $140^\circ$  angles are **supplementary** because  $40^\circ + 140^\circ = 180^\circ$ .

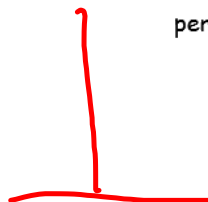
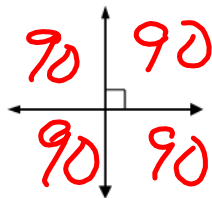
**Vertical Angles** - Vertical angles are congruent ( $\cong$ ) angles formed by the intersection of two lines. They are opposite each other and have congruent ( $\cong$ ) measurements.



$\angle 1 \cong \angle 3$  and  $\angle 2 \cong \angle 4$

Why? **They are vertical angles.**

If vertical angles formed by two intersecting lines are right angles the lines are said to be **Perpendicular lines**.



The symbol for perpendicular is  $\perp$ .

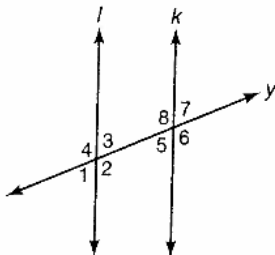


**Lesson Practice**

Choose the correct answer.

Use the diagram for questions 1–3.

Lines  $k$  and  $l$  are parallel, and line  $y$  is a transversal.

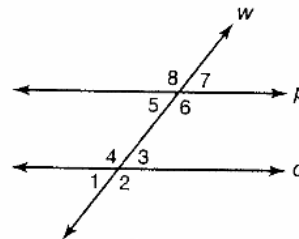


- Which pair of angles are corresponding angles?
  - $\angle 1$  and  $\angle 2$
  - $\angle 2$  and  $\angle 5$
  - $\angle 1$  and  $\angle 3$
  - $\angle 3$  and  $\angle 7$
- Which pair of angles are alternate interior angles?
  - $\angle 2$  and  $\angle 3$
  - $\angle 2$  and  $\angle 8$
  - $\angle 3$  and  $\angle 8$
  - $\angle 4$  and  $\angle 8$
- Which pair of angles are alternate exterior angles?
 

A. $\angle 1$ and $\angle 4$	C. $\angle 4$ and $\angle 6$
B. $\angle 1$ and $\angle 6$	D. $\angle 5$ and $\angle 7$

Use the diagram for questions 4–6.

Lines  $p$  and  $q$  are parallel, and line  $w$  is a transversal.

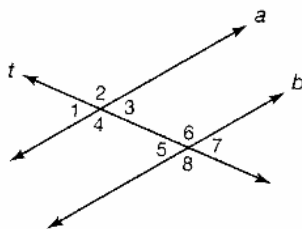


- Which angle is congruent to  $\angle 6$ ?
  - $\angle 1$
  - $\angle 2$
  - $\angle 5$
  - $\angle 7$
- Which angle is **not** congruent to  $\angle 1$ ?
  - $\angle 3$
  - $\angle 5$
  - $\angle 7$
  - $\angle 8$
- If  $\angle 2$  measures  $132^\circ$ , what is the measure of  $\angle 7$ ?
  - $42^\circ$
  - $48^\circ$
  - $58^\circ$
  - $132^\circ$

Duplicating any part of this book is prohibited by law.

Lesson 28: Parallel Lines and Transversals

7. In the diagram below, lines  $a$  and  $b$  are parallel, and line  $t$  is a transversal.



- A. If  $m\angle 2 = 112^\circ$  and  $m\angle 5 = (9x + 5)^\circ$ , what is the value of  $x$ ?  
 Explain your answer and show your work.

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- B. What are the measures of angles 1 through 8? Explain your answers.

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Math 8

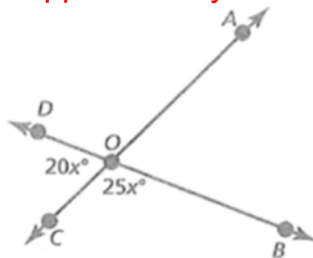
Common Core Assessment Review #1 (Geometry)

1) Which set of angle measures could form a triangle?

- A 2°, 67°, and 33°
- B 22°, 66°, and 145°
- C 36°, 42°, and 102°
- D 55°, 122°, and 159°

2) Lines  $\overline{AC}$  and  $\overline{BD}$  intersect at  $O$  as shown.

DOC and BOC are supplementary

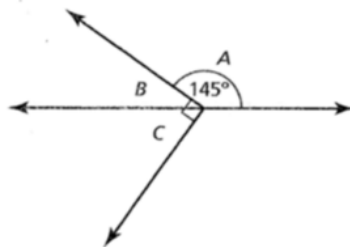


What is the measure of  $\angle BOC$ ?

- A 4°
- B 45°
- C 80°
- D 100°

3) Angles  $A$ ,  $B$ , and  $C$  are shown below.

$\angle A$  and  $\angle B$  are supplementary  
 $\angle B$  and  $\angle C$  are complementary

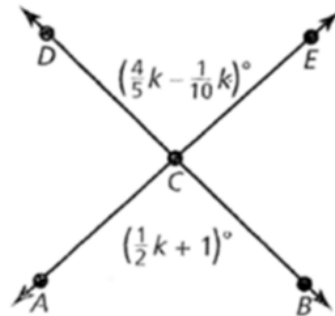


What is the measure of  $\angle C$ ?

- B** 35°
- C 125°
- D 145°
- 55°

4)

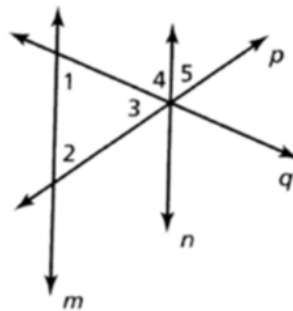
In the diagram below  $\angle ACB = \angle DCE$ .



What is the value of  $k$ ?

- |          |   |          |   |
|----------|---|----------|---|
| <b>A</b> | 4 | <b>C</b> | 6 |
| <b>B</b> | 5 | <b>D</b> | 7 |

5) In the figure below, lines  $m$  and  $n$  are parallel.



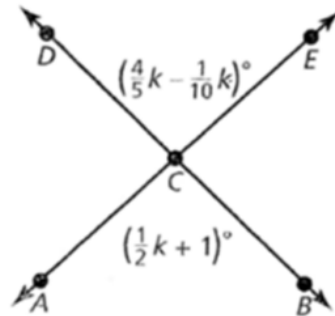
Which valid statement is part of the proof that the sum of the measures of  $\angle 1$ ,  $\angle 2$  and  $\angle 3$  is 180 degrees?

- A**  $\angle 1$  and  $\angle 4$  are congruent because they are corresponding angles on the transversal  $q$ .
- B**  $\angle 1$  and  $\angle 4$  are congruent because they are alternate interior angles on the transversal  $q$ .
- C**  $\angle 2$  and  $\angle 4$  are congruent because they are alternate interior angles on the transversal  $q$ .
- D**  $\angle 2$  and  $\angle 4$  are supplementary because they are alternate interior angles on the transversal  $q$ .



4)

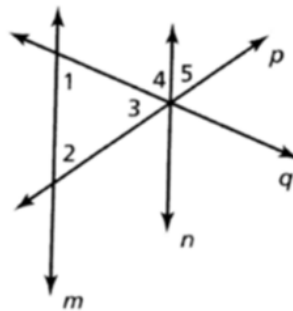
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- |          |   |          |   |
|----------|---|----------|---|
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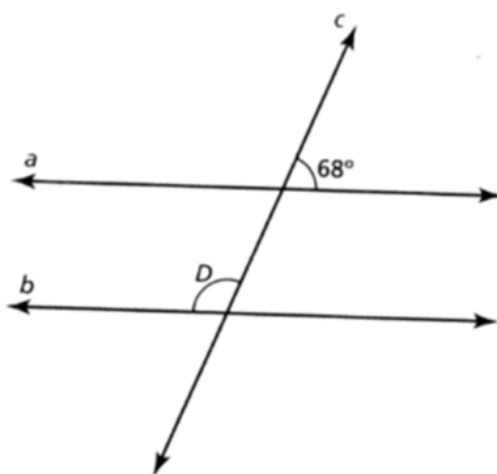
Which valid statement is part of the proof that the sum of the measures of  $\angle 1$ ,  $\angle 2$  and  $\angle 3$  is 180 degrees?

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- D**  $\angle 2$  and  $\angle 4$  are supplementary because they are alternate interior angles on the transversal  $q$ .

6) Iba constructed  $\triangle ABC$  in her notebook.  $\overline{AB}$  was 12 centimeters long.  $\overline{BC}$  was 10 centimeters long. Which measurement could be the length of  $\overline{AC}$ ?

- A 24 cm
- B 23 cm
- C 22 cm
- D 21 cm

7) Lines  $a$  and  $b$  are parallel.



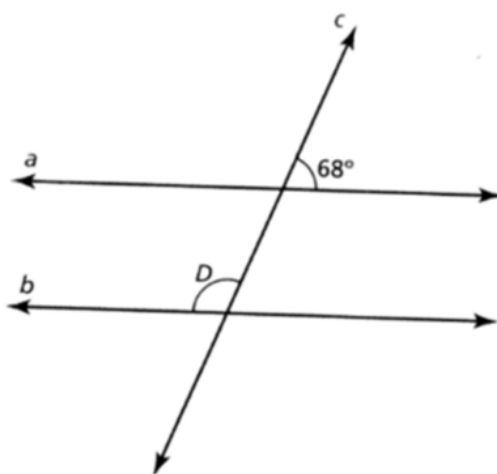
What is the measure of  $\angle D$ ?

- A  $22^\circ$
- B  $68^\circ$
- C  $112^\circ$
- D  $180^\circ$

6) Iba constructed  $\triangle ABC$  in her notebook.  $\overline{AB}$  was 12 centimeters long.  $\overline{BC}$  was 10 centimeters long. Which measurement could be the length of  $\overline{AC}$ ?

- A 24 cm
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What is the measure of  $\angle D$ ?

- A  $22^\circ$
- B  $68^\circ$
- C  $112^\circ$
- D  $180^\circ$

8)

As part of a group exercise, four students each randomly selected three cards with angle measures written on them. The table shows the results.

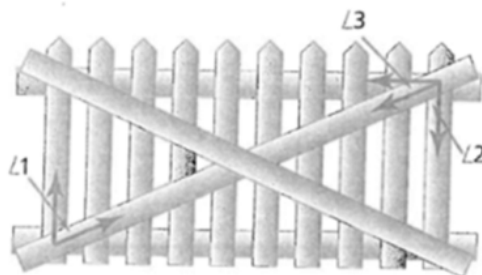
Name	Angle Measures
Aella	$60^\circ, 25^\circ, 95^\circ$
Aisha	$100^\circ, 90^\circ, 170^\circ$
Ah Lam	$90^\circ, 60^\circ, 45^\circ$
Andrew	$35^\circ, 35^\circ, 35^\circ$

Which student selected angle measures that could form a triangle?

- A Aella
- B Aisha
- C Ah Lam
- D Andrew

9)

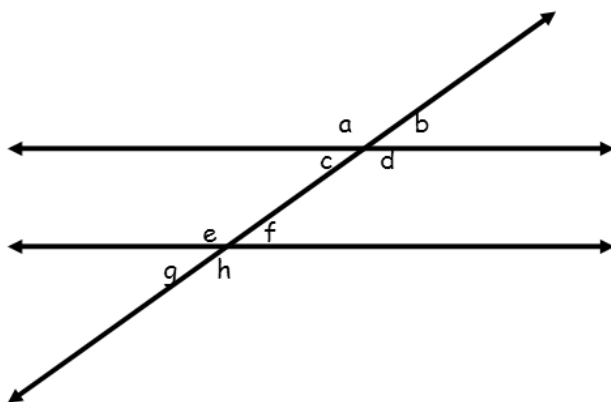
The gate for a picket fence has a cross brace as shown in the diagram below. The two horizontal braces are parallel and the measure of  $\angle 3$  is  $24^\circ$ .



Which explanation could be used to find the measure of  $\angle 1$ ?

- A Since  $\angle 2$  and  $\angle 3$  are complementary angles,  $m\angle 2 = 66^\circ$ .  $\angle 1$  and  $\angle 2$  are alternate exterior angles, so  $m\angle 1 = 66^\circ$ .
- B Since  $\angle 2$  and  $\angle 3$  are supplementary angles,  $m\angle 2 = 156^\circ$ .  $\angle 1$  and  $\angle 2$  are alternate interior angles, so  $m\angle 1 = 156^\circ$ .
- C Since  $\angle 2$  and  $\angle 3$  are complementary angles,  $m\angle 2 = 66^\circ$ .  $\angle 1$  and  $\angle 2$  are alternate interior angles, so  $m\angle 1 = 66^\circ$ .
- D Since  $\angle 2$  and  $\angle 3$  are supplementary angles,  $m\angle 2 = 156^\circ$ .  $\angle 1$  and  $\angle 2$  are corresponding angles, so  $m\angle 1 = 156^\circ$ .

10) Use the following diagram to answer the following:



- a) Name one set of vertical angles. \_\_\_\_\_
- b) Name one set of corresponding angles. \_\_\_\_\_
- c) Name one set of alternate exterior angles. \_\_\_\_\_
- d) Name one set of alternate interior angles. \_\_\_\_\_

11) ) Using the information given in the following diagram find the value of  $x$ , and then find the measures of the 2 angles given. Show all work, only an algebraic solution will be accepted.

