

Name: \_\_\_\_\_ Due Date: \_\_\_\_\_ Section: \_\_\_\_\_

**GEOMETRY**

**Cumulative Review #8 2016-17**

**PART I:** Write the answer of your choice in the space provided. Provide work that justifies your choice in the space provided. Each item is worth 2 points. A correct choice without appropriate justification will receive 1 point.

**Work Space for Justification**

\_\_\_\_\_ 1. If a line segment has endpoints  $A(3x + 5, 3y)$  and  $B(x - 1, -y)$ , what are the coordinates of the midpoint of  $\overline{AB}$ ?

- [A]  $(x + 3, 2y)$
- [B]  $(2x + 2, y)$
- [C]  $(2x + 3, y)$
- [D]  $(4x + 4, 2y)$

\_\_\_\_\_ 2. Phil is cutting a triangular piece of tile. If the triangle is scalene, which set of numbers could represent the lengths of the sides?

- [A]  $\{2, 4, 7\}$
- [B]  $\{4, 5, 6\}$
- [C]  $\{3, 5, 8\}$
- [D]  $\{5, 5, 8\}$

\_\_\_\_\_ 3. Isosceles trapezoid  $ABCD$  has diagonals  $\overline{AC}$  and  $\overline{BD}$ . If  $AC = 5x + 13$  and  $BD = 11x - 5$ , what is the value of  $x$ ?

- [A] 28
- [B]  $10\frac{3}{4}$
- [C] 3
- [D]  $\frac{1}{2}$

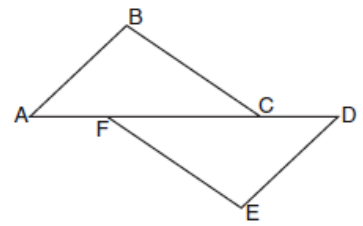
\_\_\_\_\_ 4. Line  $y = 4x - 2$  is dilated from point  $C(0, -2)$  with a scale factor of 3. The relationship between the preimage and image lines will be :

- A. *Parallel*
- B. *Perpendicular*
- C. *Coincident*
- D. *Skew*

**PART II:** (2pts) You must SHOW WORK (calculations, drawing, formulas, etc) for full credit for each question.

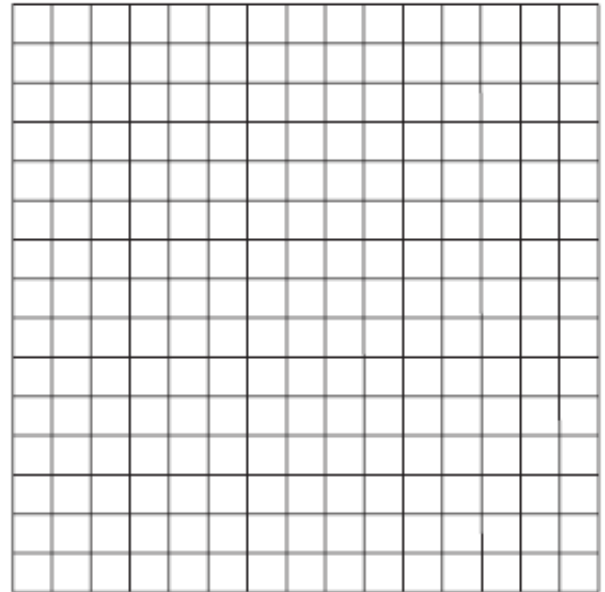
4. Given:  $\overline{AFCD}$ ,  $\overline{AB} \perp \overline{BC}$ ,  $\overline{DE} \perp \overline{EF}$ ,  $\overline{BC} \parallel \overline{FE}$ ,  $\overline{AB} \cong \overline{DE}$  for the drawing,

it can be proven that  $\triangle BCA \cong \triangle$  \_\_\_\_\_ by the criteria \_\_\_\_\_



5. Given the points P (-10, 5) and R (2, -1), find and state the coordinates of point Q such that it divides  $\overline{PR}$  into a ratio of

2:4. Include a drawing with your solution.



**PART III:** For each question in this section you must show ALL WORK, including formulas, substitutions, drawings, etc. Each question is worth 4 credits. If a solution is given with no work, only one credit will be given.

5. Find the area and Perimeter of Square ABCD in simplest radical form whose diagonal is 10 cm.

6. In the accompanying diagram, isosceles  $\triangle ABC \cong$  isosceles  $\triangle DEF$ ,  $m\angle C = 5x$ , and  $m\angle D = 2x + 18$ . Find  $m\angle B$  and  $m\angle BAG$ .

