CC GEOMETRY   **BATTA**

<div align="center">

UNIT 5: TAKE-HOME QUIZ

DUE: THURSDAY, 1/2/20!

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1. Under which transformation would $\triangle A'B'C'$, the image of $\triangle ABC$, *not* be congruent to $\triangle ABC$?

    1) A dilation of scale factor 1 centered at A
    2) rotation of 90° clockwise about the origin
    3) translation of 3 units right and 2 units down
    4) dilation with a scale factor of 2 centered at the origin

2. Two triangles are similar, and the ratio of each pair of corresponding sides is $2:1$. Which statement regarding the two triangles is *not* true?

    1) Their areas have a ratio of $4:1$.
    2) Their altitudes(sides) have a ratio of $2:1$.
    3) Their perimeters have a ratio of $2:1$.
    4) Their corresponding angles have a ratio of $2:1$.

3. In the diagram shown, $\triangle ABC$ is dilated by a scale factor of k to produce $\triangle A'B'C'$. What of the following conclusions must be *true*?

    1) $k > 1$
    2) $0 < k < 1$
    3) $k < 0$
    4) The dilation is centered at B.
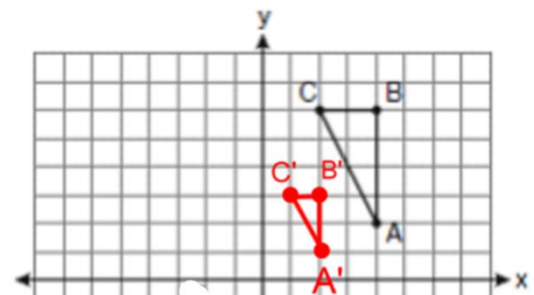
4. If $\overline{YZ}$ is dilated by a factor of 5 about a point not on $\overline{YZ}$ to produce the image $\overline{Y'Z'}$, then which of the following is true?

    (1) $\overline{Y'Z'} \parallel \overline{YZ}$ and $Y'Z' = \dfrac{1}{5}YZ$
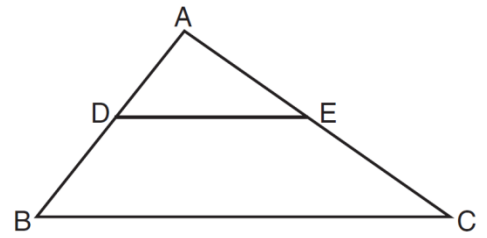
    (2) $\overline{Y'Z'} \perp \overline{YZ}$ and $Y'Z' = \dfrac{1}{5}YZ$

    (3) $\overline{Y'Z'} \perp \overline{YZ}$ and $Y'Z' = 5YZ$

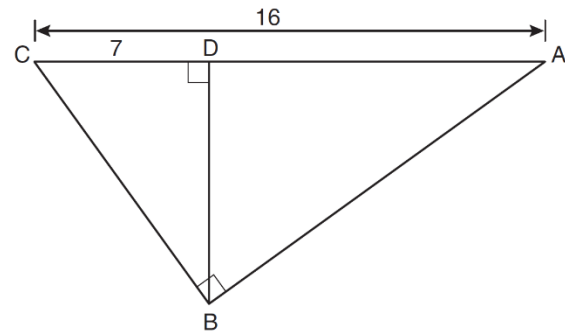   **(4)** $\overline{Y'Z'} \parallel \overline{YZ}$ and $Y'Z' = 5YZ$

5. In the diagram below, $\triangle ABC \sim \triangle ADE$. Which measurements are justified by this similarity?

1) $AD = 3$, $AB = 6$, $AE = 4$, and $AC = 12$

2) $AD = 5$, $AB = 8$, $AE = 7$, and $AC = 10$

3) $AD = 3$, $AB = 9$, $AE = 5$, and $AC = 10$
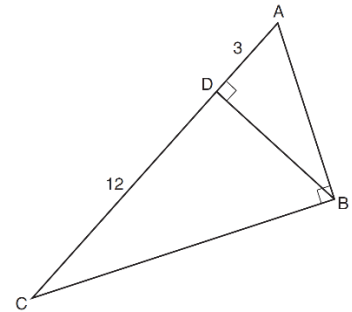
4) $AD = 2$, $AB = 6$, $AE = 5$, and $AC = 15$

6. In the diagram below of right triangle ABC, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$, $AC = 16$, and $CD = 7$
What is the length of $\overline{BD}$?

1) $3\sqrt{7}$

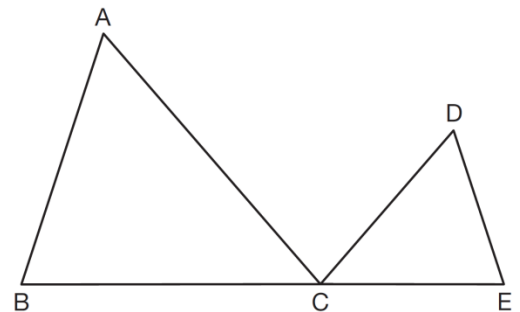2) $4\sqrt{7}$

3) $7\sqrt{3}$

4) 12

7. In right triangle ABC shown in the diagram below, altitude $\overline{BD}$ is drawn to hypotenuse $\overline{AC}$, $CD = 12$, and $AD = 3$.
What is the length of $\overline{AB}$?

1) $5\sqrt{3}$

2) 6

3) $3\sqrt{5}$

4) 9
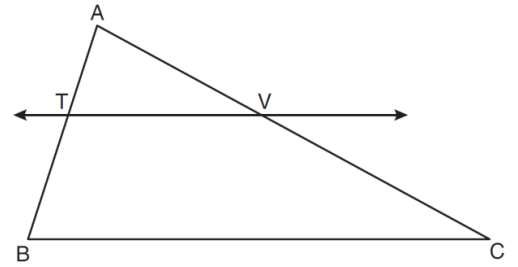
8. In the diagram below, $\triangle ABC \sim \triangle DEC$. If AC = 12 , DC = 7, DE = 5 , and the perimeter of $\triangle DEC$ is 30, what is the perimeter of $\triangle ABC$?

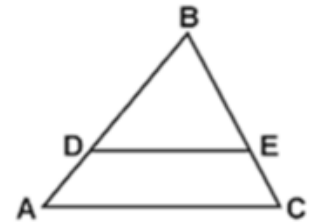1) 12.5

2) 14.0

3) 14.8

4) 17.5

9. In the diagram below of $\triangle ABC$, $\overleftrightarrow{TV} \parallel \overline{BC}$, $AT = 5$, $TB = 7$, and $AC = 18$. What is the length of $\overline{VC}$?

10. In the accompanying diagram, $\overline{DE} \parallel \overline{AC}$. If $BD = 6$, $AD = 2$, and $ED = 9$, find the measure of $\overline{AC}$.

11. To find the distance across a pond from point B to point C, a surveyor drew the diagram below. The measurements he made are indicated on his diagram. Use the surveyor's information to determine and state the distance from point B to point C, to the *nearest yard*.
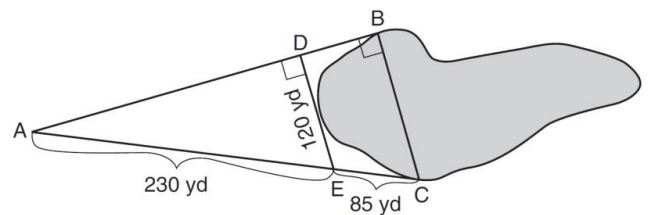
12. In the diagram below, the line of sight from the **park ranger station, P**, to the **lifeguard chair, L**, on the beach of a lake is perpendicular to the path joining the **campground, C**, and the **first aid station, F**. The campground is 0.25 mile from the lifeguard chair. The straight paths from both the campground and first aid station to the park ranger station are perpendicular.
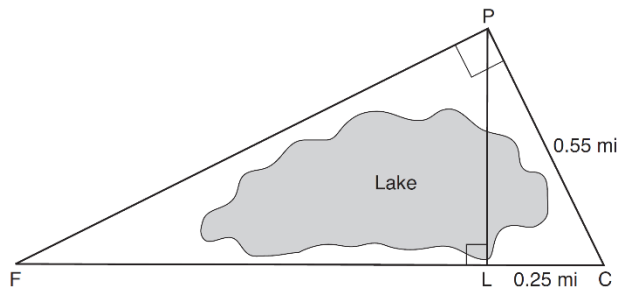
a) If the path from the park ranger station to the campground is 0.55 mile, determine and state, to the *nearest hundredth of a mile*, the distance between the **park ranger station, P**, and the **lifeguard chair, L**.

b) Gerald believes the distance from the **first aid station, F**, to the **campground, C**, is *at least 1.5 miles*. Is Gerald correct? Justify your answer. *(HINT: Find the length of FC to determine your answer)*