Name_____ Date_____ Period_____ Geometry w/ Trig

Quarterly 3 Exam Review

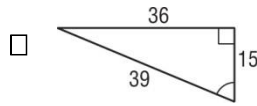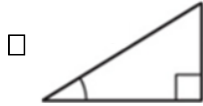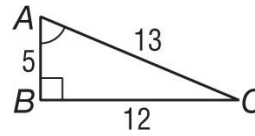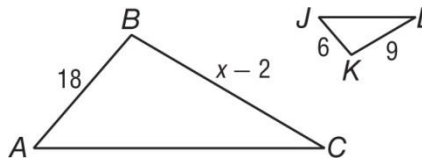1. Which triangle(s) are similar to $\triangle ABC$? Select all that apply.

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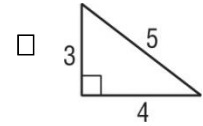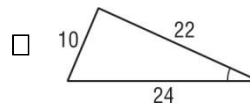
Multiple Choice: For #2 – 10, choose one correct answer.

2. Find the value of x if $\triangle ABC \sim \triangle JKL$.

   a. 10   b. 25   c. 14   d. 29

3. Given $ABCD \sim PQRS$, $AB = 10$, $BC = 6$, $PS = 12$ and $QR = 4$, find the scale factor from $ABCD$ to $PQRS$. Draw a diagram!

   a. $\dfrac{1}{2}$ b. $\dfrac{3}{2}$ c. $\dfrac{5}{3}$ d. $\dfrac{5}{6}$

4. The measures of the angles of a triangle are in the extended ratio of 5 : 5 : 8. Find the measure of the **largest** angle.

   a. 10º   b. 50º   c. 80º   d. 180º

5. The measures of the angles of a triangle are in the extended ratio of 5 : 5 : 8. Classify the triangle by **angles and sides**.

   a. Right Scalene   b. Acute Isosceles   c. Right Isosceles   d. Acute Scalene

6. Determine if the numbers 12, 14, and 28 can represent the side lengths of a triangle. If yes, classify the triangle.

      a. obtuse triangle   b. right triangle   c. acute triangle   d. not a triangle

7. *EFGH* and *STUV* are similar. The ratio of corresponding sides is 7 : 12. What is the ratio of perimeters of *EFGH* to *STUV*?

      a. 7 : 12   b. 49 : 144   c. 12 : 7   d. 14 : 24

8. Determine if the numbers 9, 10, and 11 can represent the side lengths of a triangle. If yes, classify the triangle
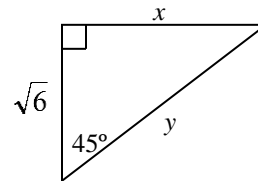
      a. not a triangle   b. Obtuse triangle   c. right triangle   d. acute triangle

9. *EFGH* and *STUV* are similar. The ratio of corresponding sides is 5 : 9. What is the ratio of areas of *EFGH* to *STUV*?
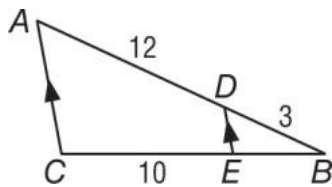
      a. 5 : 9   b. 10 : 18   c. 25 : 81   d. 81 : 25

10. Solve for *x* and *y*. *Leave your answers in simplest radical form.*
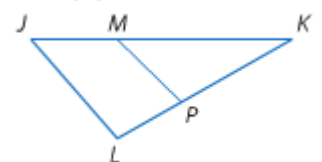
    a. $x = 3\sqrt{2}, y = \sqrt{6}$
    b. $x = \sqrt{6}, y = 2\sqrt{3}$
    c. $x = \sqrt{6}, y = \sqrt{18}$
    d. $x = \sqrt{2}, y = \sqrt{6}$

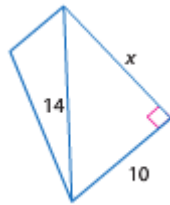| 11. In $\triangle ABC$, $\overline{DE} \parallel \overline{AC}$. Find *BE*.	12. In $\triangle JKL$, JK = 15, JM = 5, LK = 13, and PK = 9. Determine if $\overline{JL} \parallel \overline{MP}$.

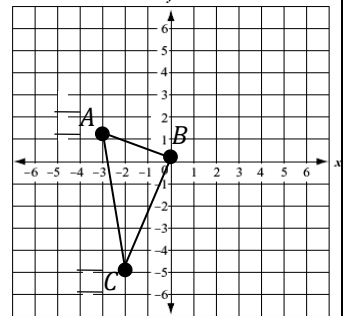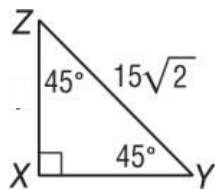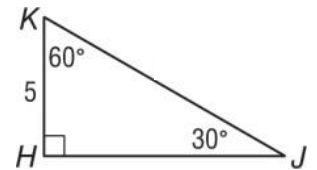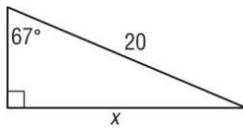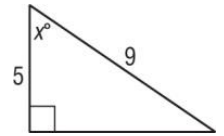|	
13. A five foot tall student casts a shadow that is 4 feet long. If the tree next to her casts a 44 foot shadow, how tall is the tree? *Draw a diagram!*	14. Given that ΔFGH ~ ΔPQR, FG = 6, PQ = 10, and the perimeter of ΔPQR is 35, what is the perimeter of ΔFGH? *Draw a diagram!*
15. Find the value of *x*. Leave your answer in simplest radical form. 14 x 10 *x* =_____	16. What are the endpoints of ΔABC under a dilation centered at the origin with a scale factor of 2 : 1? A':_____ B':_____ C':_____
17. Find *XZ* and *XY* in ΔXYZ. Z 45° 15√2 45° X Y *XZ* = _____ *XY* = _____	18. Find *HJ* and *JK* in ΔHJK. K 60° 5 30° H J *HJ* = _____ *JK* = _____
19. The measures of the angles of a quadrilateral are in the extended ratio of 1 : 2 : 3 : 4. Find the measure of each angle.	20. Given the dilation below, find the scale facor and solve for the value of *x*. R R' 18 x 12 T T' 20 C 15 Y S' S Scale Factor:_____ x=_____
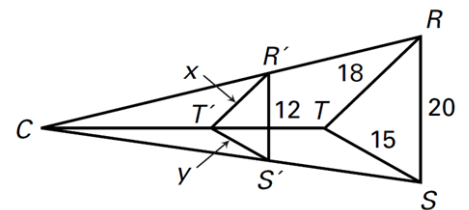
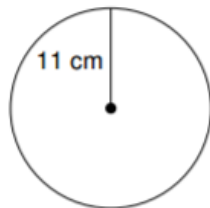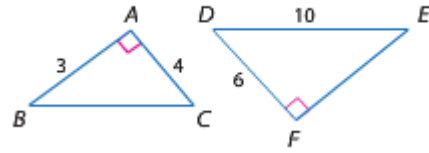| 21. Find the value of *x* to the nearest hundredth.	22. Find the value of *x* to the nearest degree.
67° 20 x	x° 9 5
23. A movie theater typically makes $455 a movie if 35 people attend. How many people attended the movie if they made $820?	24. Find the area of the **equilateral triangle**. *Leave your answer in radical form.* 8 x 8 60°
25. Find the area of the circle below. 11 cm	26. The length of a leg of a **right isosceles** triangle is $5\sqrt{6}$ inches. What is the length of the hypotenuse? Express your answer in simplest radical form
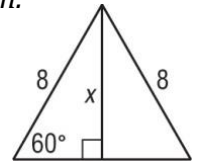
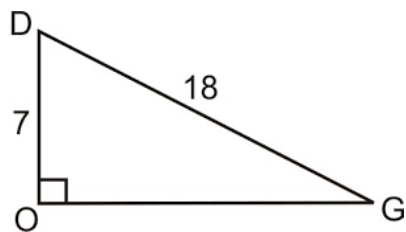| 27. Of the 240 students eating lunch, 96 purchased their lunch and the rest brought a bag lunch. What is the ratio of students purchasing lunch to students bringing a bag lunch?	28. A ramp is 11.4 meters long and has an angle of elevation of 20º from the ground. How high does the ramp rise? Round to the nearest tenth.

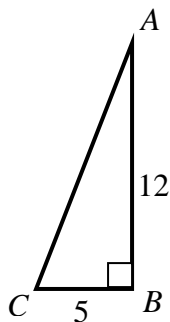|	
28. The ratio of the areas of two similar quadrilaterals is 121 : 49. The smaller quadrilateral has side lengths of 5, 4, 7, and 6. What is the length of the **longest side** of the second quadrilateral?	29. Determine if the two triangles are similar. If so, state the theorem or postulate that proves them similar.
30. Solve the triangle. Round side lengths to the nearest hundredth and angle measures to the nearest degree. $OG \approx$ _____ $m\angle D \approx$ _____ $m\angle G \approx$ _____	31. Determine if 6, $8\sqrt{2}$, and 13 can form a triangle. If so, classify the triangle as right, obtuse or acute.

32. Use the diagram to fill in the blanks. **DO NOT SOLVE!**

a) $\tan^{-1}\left(\dfrac{12}{5}\right) =$ _____

b) _____$^{-1}\left(\dfrac{5}{12}\right) = m\angle A$

c) $m\angle C = \cos^{-1}\left(\dfrac{\quad}{\quad}\right)$

d) $\sin C =$ ____

e) $\cos A =$ ____

f) $\sin$ ___ $= \dfrac{5}{13}$