Geometry
Ch. 8-9A Review HW #11

Name: _____
Period: ____

Topics on Ch. 8-9A Test:

- Similar Polygons
- Scale Factor
- Determining if two triangles are similar.
- Find the missing side lengths on similar triangles
- Word problems that can be solved using similar triangles
- Perimeter and Area of similar figures
- Simple Radical Form
- Pythagorean Theorem
- Special Right Triangles (45°-45°-90° and 30°-60°-90°)
- Problem Solving

Vocabulary:

1. **Similar Polygons** – Determine which word corresponds to each letter (a) – (e).

scale sides angles proportional congruent factor

Two polygons are **similar** if and only if their corresponding _____ (a) _____ are _____(b)_____ and corresponding ____(c)____ are _____(d)_____. The ____(e)_____ _____(f)_____ is a number by which the side length of one figure is multiplied by to obtain the side length of a similar figure.

2. **Similar Triangles**
Two triangles can be proved similar by the ___(a)____, ___(b)___, and ___(c)___ properties.

3. **Perimeter and Area of Similar Figures**:
If two similar figures have a scale factor of k, then the perimeter of those figures has a scale factor of _____ and the area of those figures has a scale factor of _____.

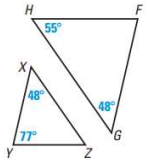
4. **Simple Radical Form** – Determine which word corresponds to each letter (a) – (d).

denominator factors fractions square

- Expressions can't have _____(a)_____ ____(b)_____under the radical symbol.
- Expressions can't have _____(c) _____ under the radical symbol
- Expressions can't have radical symbols in the _____(d)_____

Determine if the figures are similar and state how you know. (make a convincing argument).

5.



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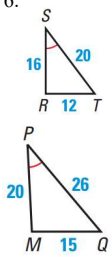

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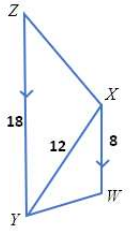

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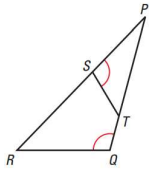

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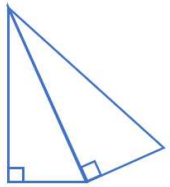
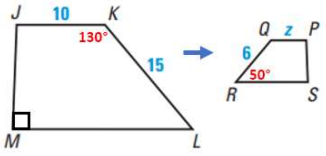
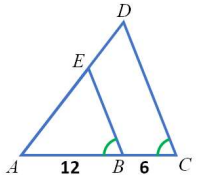


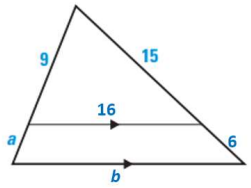
10. Quad $JKLM$ ~ Quad $PQRS$
a) Find the scale factor.
b) Find the value of z
c) Find $m\angle S$, $m\angle L$ and $m\angle J$



11. Refer to the diagram:
a) $\triangle EAB \sim \triangle$? .
b) Explain how you know the two triangles are similar.
c) Find the scale factor of the smaller triangle to the larger triangle.
d) If $AE = 14$, then find AD

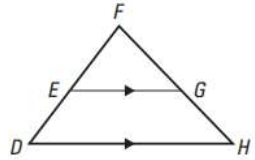


12. Find the value of a and b by writing and solving a proportion for each.

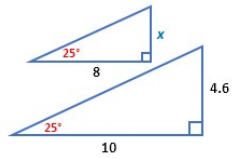


13. Determine if each statement is **true** or **false**.

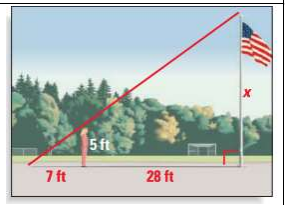
a) $\frac{FE}{ED} = \frac{FG}{GH}$
b) $\frac{FE}{FD} = \frac{FG}{FH}$
c) $\frac{ED}{FE} = \frac{EG}{DH}$
d) $\frac{EG}{DH} = \frac{EF}{DF}$



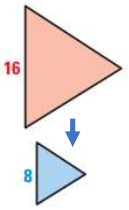
14. Find the value of x by writing and solving a proportion.



15. Julia uses the shadow of the flagpole to estimate its height. She stands so that the tip of her shadow coincides with the tip of the flagpole's shadow as shown. Julia is 5 feet tall. The distance from the flagpole to Julia is 28 feet and the distance between the tip of the shadows and Julia is 7 feet.



16. The two triangles are similar.
a) What is the scale factor?
b) The perimeter of the larger one is 44 cm Find the perimeter of the smaller one.
c) The area of the larger one 60 cm^2. Find the area of the smaller one.

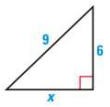


17. Rewrite in simple radical form.

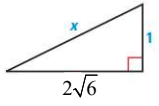
a) $\sqrt{27}$
b) $\sqrt{\frac{3}{4}}$
c) $\sqrt{\frac{4}{3}}$
d) $\frac{6}{\sqrt{2}}$
e) $\sqrt{\frac{9}{4}}$
f) $\frac{12}{\sqrt{3}}$
g) $\sqrt{\frac{5}{2}}$
h) $\sqrt{16}$

18. Use the Pythagorean Theorem to find the missing side length.

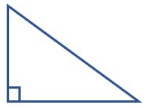
a)



b)

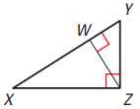


19. The hypoteneuse of a right triangle is 5 cm long and one of the legs is 4 cm long. Find the area and perimeter of the triangle.



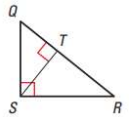
20. Similar Right Triangles: Comple the proportion for each.

a)



$\frac{XW}{ZW} = \frac{?}{YW}$

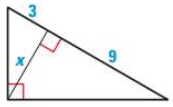
b)



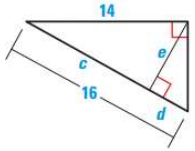
$\frac{QT}{SQ} = \frac{SQ}{?}$

21. Find the value of each variable.

a)



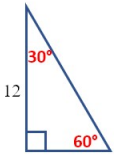
b)



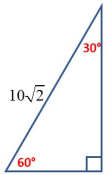
22. Find the missing side length on each triangle.

a)

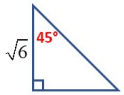
b)



c)



e)



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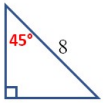
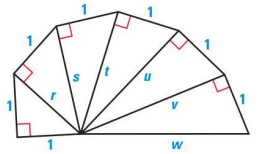


23. Find the value of each variable.



24. The perimeter of an equilateral triangle is 30 cm. Find the area.

25. The diagonal of a square is $\sqrt{6}$ cm. Find the perimeter and the area.