## Geometry - Chapter 7 Test Review

## Standards/Goals:

$\checkmark \quad$ C.1.e.: I can read and write different types and formats of proofs such as indirect proofs.
$\checkmark$ G.SRT.2./G.SRT.3/ C.1.h.: I can use several methods, including AA, SAS, and SSS, to prove that two triangles are similar, corresponding sides are proportional, and corresponding angles are congruent.
$\checkmark$ E.1.b.: I can identify congruent figures and their corresponding parts.
$\checkmark$ G.SRT.5./ E.1.c.: I can identify similar figures and use ratios and proportions to solve mathematical and real-world problems.
$\checkmark \quad$ E.1.d.: I can use the definition of similarity to establish the congruence of angles, proportionality of sides, and scale factor of two similar polygons.
$\checkmark$ G.GPE.4.: I can understand the idea of a ratio in the context of a line segment between two given points.

IMPORTANT VOCABULARY

| Ratio | Scale Factor | Proportion | Extremes | Means | Cross <br> products | Cross Multiply |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Similarity | Similar Polygons | Similar Triangles | 'extended <br> proportion' | Similarity <br> Statement | AA Similarity | SSS Similarity |
| SAS <br> Similarity | Triangle <br> Proportionality <br> Theorem | Converse of <br> Triangle <br> Proportionality <br> Theorem | Triangle <br> Proportional <br> Segment <br> Theorem | Triangle <br> Angle <br> Bisector <br> Theorem | Proportional <br> Perimeters <br> Theorem | Perimeter |
| Altitude | Angle Bisector | Median | Ratio of <br> Similitude | Parallel | Adjacent | Corresponding <br> Parts |

Short Answer Given: XYWZM ~ OPQRS
a. $<P=$
b. $<Z=$
c. $<0=$
d. $\angle S=$

e. $\frac{W Z}{X M}=-$
f. $\frac{X Y}{M Z}=-$
g. $a=$
h. $b=$


State whether the following polygons are similar or not. Justify your answer. In the case of a triangle, state the postulate.
\#1.

Similar? Yes or No? Explain.


\#2.


Similar? Yes or No? Explain.

Similar? Yes or No? Explain.


## Problems

\#1. If rectangle $A B C D \sim$ rectangle $E F G H$, the perimeter of $A B C D$ is 54 centimeters, and the perimeter of EFGH is 36 centimeters, what is the scale factor of ABCD to EFGH?
\#2. The ratio of 2 corresponding angle bisectors in 2 similar triangles is 8:6. If one side of the smaller triangle is 10 , find the corresponding side of the larger triangle.
\#3. A $51 / 2 \mathrm{ft}$ tall person is standing 14 feet away from a lamppost. The light on the lamppost is 18 ft above the ground. How long, in feet, is the person's shadow?
\#4. In the figure shown, $\mathrm{BG}=\mathrm{FE}$ and $\mathrm{BF}=\mathrm{GE}$. Additionally, $n_{1}\left\|n_{2}\right\| n_{3}$ and $n_{4} \| n_{5}$. Which angle congruence statement could be used in a proof of: $\triangle A B C \sim \triangle D E C$ ?

\#5. In a new subdivision, three trapezoidal lots are 90 feet, 108 feet, 115 feet, respectively across their fronts. The lot lines on the side are all perpendicular to the front. What is the length of the property lines across the back of each lot?

\#6. Find x .

\#7. Find x .

\#9. Find x .

\#10. Find $x$.


\#12. Given: $\triangle A B C \sim \triangle D E C$. Find x .

\#13. Use the figure below to answer the next TWO questions:
a. What is $\frac{A D}{A B}$ in simplest form?
b. What is $\frac{\text { slope of } \overline{B E}}{\text { slope of } \overline{A E}}$ in simplest form?

\#14. Given that $\triangle A D C \sim \Delta \mathrm{EBC}$. Which are some proportions that would be correct?


## Multiple Choice

\#1. Two polygons that have exactly the same shape, but not necessarily the same size, are
a. Congruent
b. Similar
c. Proportional
d. Equal
\#2. Two polygons are congruent if their corresponding angles are congruent and their corresponding sides are $\qquad$ .
a. Congruent
b. Proportional
\#3. Two polygons are similar if their corresponding angles are congruent and their corresponding sides are $\qquad$ _.
a. Congruent
b. Proportional
\#4. Find x .
a. 4.2
b. 4.65
c. 5.6
d. 8.4

\#5. $\triangle \mathrm{ABC}$ is scalene. Which is a contradiction to this statement?
a. $A B \neq B C \neq A C$
b. $\angle A \neq \angle B \neq<C$
c. $\triangle A B C$ is isosceles
d. $\triangle A B C$ is acute

## ALGEBRA FLASHBACK:

Solve, graph, and write an interval for each:
\#1. $10+|x+9|<8$
\#2. $-4|8 x-9|>20$
\#3. $|x+9|+18=17$
\#4. $1+|x-12|=7$
\#5. $-2|x| \geq 10$
\#6. $2|x| \geq 10$
\#7. What is the equation, in standard form, of the line that passes through $(10,-6)$ and has a slope of 3/4?

