Similarities

Homework Practice Test 7 Name_____

Answer true or false. If false, tell why in the margin after the problem.

#1) A ratio is a comparison of two numbers.

#2) Cross products are another name for cross multiply.

#3) The golden ratio was used by Egyptians and is the ratio 1:1.618.

#4) If two angles of one triangle are congruent to two angles of another triangle, then the triangles are congruent.

#5) Similarity of triangles is reflexive, symmetric, and transitive.

#6) An altitude of a triangle goes through a vertex and is perpendicular to the side opposite that vertex.

#7) Perimeter is the distance around an object.

#8) A proportion is an equation stating that two ratios are equal.

#9) If triangle ABC is similar to triangle EFG, then $\frac{AB}{EF} = \frac{BC}{EG}$

#10) An equilateral triangle always has 60° angles.

Multiple choice. Choose the best answer.

#11) Which of the following proportions is true if quadrilateral ABCD is similar to quadrilateral EFGH?

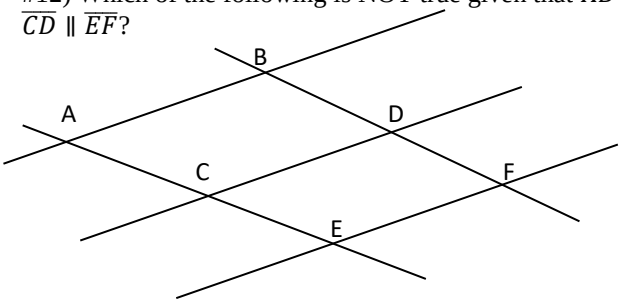
A) $\frac{AB}{DC} = \frac{HG}{EF}$

B) $\frac{AD}{DC} = \frac{HE}{FG}$

C) $\frac{BC}{DC} = \frac{FG}{HG}$

D) $\frac{17}{19} = \frac{3}{4}$

#12) Which of the following is NOT true given that $\overline{AB} \parallel \overline{CD} \parallel \overline{EF}$?



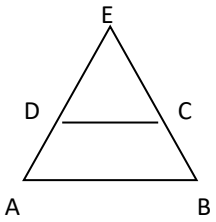
A) $\frac{AC}{BD} = \frac{CE}{DF}$

B) $\frac{AE}{BF} = \frac{CE}{DF}$

C) $\frac{AC}{BD} = \frac{DF}{CE}$

D) AB // EF

#13) Which of the following is a true conclusion given that $\overline{AB} \parallel \overline{DC}$?



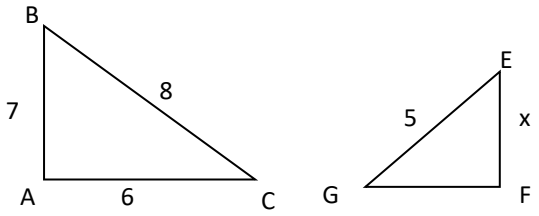
A) 2DC = AB

B) DC = ½AB

C) $\frac{DC}{AB} = \frac{AB}{DC}$

D) $\frac{ED}{EC} = \frac{DA}{CB}$

#14) If ΔABC is similar to ΔEFG, find x.



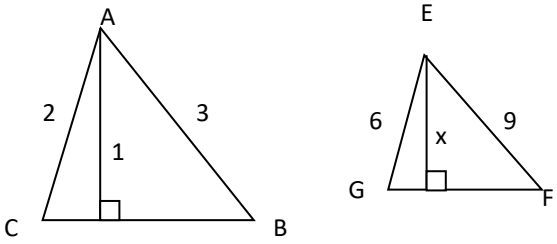
A) $\frac{35}{6}$

B) $\frac{40}{7}$

C) $\frac{35}{8}$

D) No solution.

#15) If triangle ABC is similar to triangle EFG, find x.



A) $\frac{1}{3}$

B) 3

C) $\frac{9}{2}$

D) $\frac{2}{9}$

Short answer. Use complete sentences. A definition covers all situations. An example is a specific situation.

#16) Define similar polygons. Also, give an example of similar polygons.

Definition

Example:

#17) Define congruent polygons. Also, give an example of congruent polygons.

Definition

Example:

Similarities

Homework Practice Test 7 Name_____

#18) Define scale factor. Also, give an example of a scale factor.

Definition

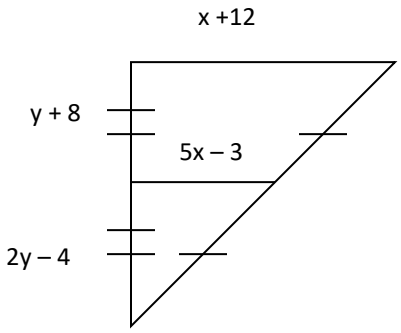
Example:

#19) Define SSS similarity. Also, give an example of SSS similarity.

Definition

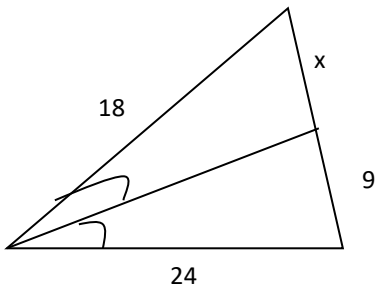
Example:

#20) Find the value of x and y.



#21) If B, D, and F are midpoints of sides $\overline{CA}$, $\overline{CE}$, and $\overline{AE}$ respectively, BD = 6, BF = 12, and DF = 15, find the perimeter of ΔAEC. Also, label the lengths of each segment in your drawing.

#22) Find the value of x.



#23) Find all values of x.

$$\frac{x+1}{7} = \frac{8}{x}$$

#24) The pitch of a roof is the ratio of the rise to the run. If a roof has a rise of 2.5 feet and a run of 13.5 feet, what is its pitch?

#25) Joan Frank is a potter making a rectangular clay plaque 25 inches wide and 36 inches long. The plaque shrinks uniformly in the kiln to a 30 inch length. What is the width after the plaque shrinks?