Name: ______________________________

Determining Scale using Coordinate Points

Scale is determined by comparing an image (the new figure) to its pre-image (the original figure) using a fraction. Basically, $scale = \frac{new}{old}$. This formula applies whether you are using side lengths or x-y points. Remember, the prime symbol (') is used to identify the image (new figure).

Example:
Determine the scale factor of the dilated figure using the given points. $X(20,36)$, $Y(8,28)$, $Z(20,16)$, $X'(5,9)$, $Y'(2,7)$ & $Z'(5,4)$

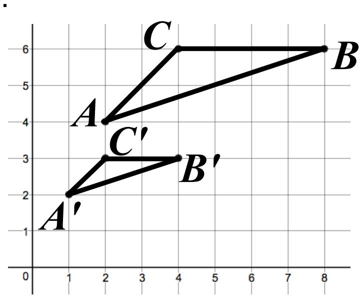
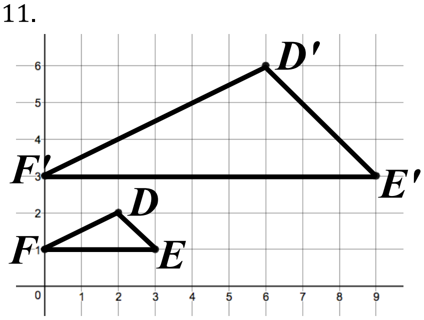
Since the problem uses the term "dilated figure," you know that the figures are similar (which means you do not need to check the scale). Pick any point and its match to create the scale.

New: $X'(5,9)$ *Old:* $X(20,36)$

$$Scale = \frac{X'}{X} = \frac{(5,9)}{(20,36)} \quad Split\ up: \frac{5}{20}\ \&\ \frac{9}{36} \quad Simplify: \frac{5 \div 5}{20 \div 5} = \frac{1}{4}\ \&\ \frac{9 \div 9}{36 \div 9} = \frac{1}{4}$$

The scale factor is $\boxed{\frac{1}{4}}$.

Determine the scale factor of each dilated figure using the given points.

1. $A(2,4)$ & $A'(5,10)$	2. $B(5,10)$ & $B'(2,4)$	3. $C'(6,15)$ & $C(8,20)$
4. $D'(8,20)$ & $D(6,15)$	5. $E(12,18)$ & $E'(28,42)$	6. $F'(12,18)$ & $F(28,42)$
7. $G'(2,10), H'(16,6), I'(4,18), G(9,45), H(72,27)$ & $I(18,81)$	8. $G(2,10), H(16,6), I(4,18), G'(9,45), H'(72,27)$ & $I'(18,81)$	9. $M'(36,44), N'(8,40), P'(48,24), M(27,33), N(6,30)$ & $P(36,18)$
10. 	11. 	12. 

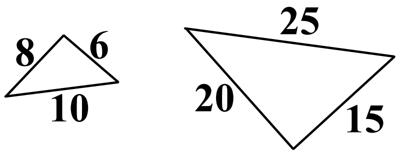
Correct Scale Factors: 1. $\frac{5}{2}$ 2. $\frac{2}{5}$ 3. $\frac{3}{4}$ 4. $\frac{4}{3}$ 5. $\frac{7}{3}$ 6. $\frac{3}{7}$ 7. $\frac{2}{9}$ 8. $\frac{9}{2}$ 9. $\frac{4}{3}$ 10. $\frac{1}{2}$ 11. $\frac{3}{1}$ 12. $\frac{3}{2}$

Name: ________________________________

Determining if Parts are Similar

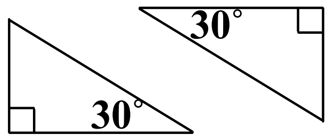
For each triangle, look for similar parts. Remember, similar angles are the same & similar side **fractions** are equal.

13.



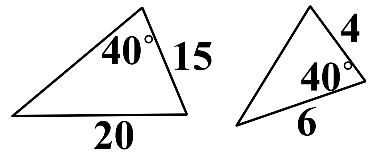
Are all given sides similar? YES or NO
Are the angles similar? YES or NO

14.



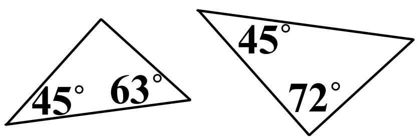
Are all given sides similar? YES or NO
Are the angles similar? YES or NO

15.



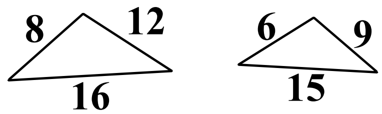
Are all given sides similar? YES or NO
Are the angles similar? YES or NO

16.



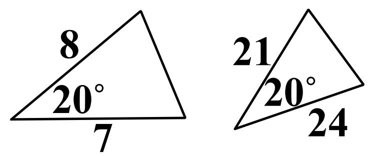
Are all given sides similar? YES or NO
Are the angles similar? YES or NO

17.



Are all given sides similar? YES or NO
Are the angles similar? YES or NO

18.



Are all given sides similar? YES or NO
Are the angles similar? YES or NO

There are	3 **Similar** Triangle Properties:	SSS	SAS	AA		
	5 **Congruent** Triangle Properties:	SSS	SAS	ASA	AAS	HL
and	1 Property about what happens *after* you prove congruence:				CPCTC	

Identify which property is described by each statement below (most properties will appear more than once).

19. I know that 2 side fractions and the angle connecting them are the same for both triangles, so I know that the triangles are similar.	
20. I know that 2 angles and the side connecting them are the same for both triangles, so I know that the triangles are congruent.	
21. I know that the triangles are congruent, so I know that the 3 sides are the same for both triangles.	
22. I know that the hypotenuse and one of the other sides are the same for both right triangles, so I know that the triangles are congruent.	
23. I know that 2 angles are the same for both triangles, so I know that the triangles are similar.	
24. I know that 2 sides and the angle connecting them are the same for both triangles, so I know that the triangles are congruent.	
25. I know that the triangles are congruent, so I know that 2 angles and the side connecting them are the same for both triangles.	
26. I know that the triangles are congruent, so I know that the hypotenuse and one of the other sides are the same for both right triangles.	
27. I know that 3 side fractions are the same for both triangles, so I know that the triangles are similar.	
28. I know that the triangles are congruent, so I know that 2 sides and the angle connecting them are the same for both triangles.	
29. I know that 2 angles and the side that is not connecting them are the same for both triangles, so I know that the triangles are congruent.	
30. I know that 3 sides are the same for both triangles, so I know that the triangles are congruent.	