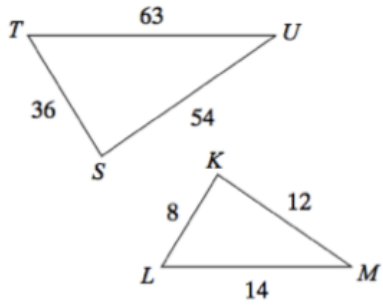
Geometry
Unit 3: Similar Figures and Dilation
3.1 Proportions, Corresponding Parts in Similar Figures

Mathematician: _____
Period:_____

## LEVEL: EMERGING

Directions: Determine if the polygons are similar.
If they are, determine the linear scale factor and write a similarity statement.

1)

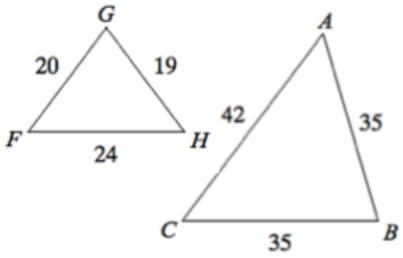



Similar? YES or NO

Linear Scale Factor: _____

Similarity Statement: _____

2)

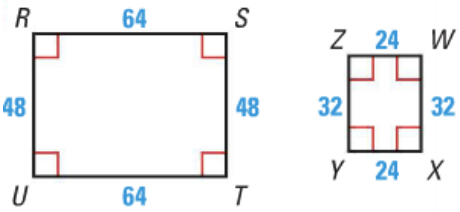



Similar? YES or NO

Linear Scale Factor: _____

Similarity Statement: _____

3)




Similar? YES or NO

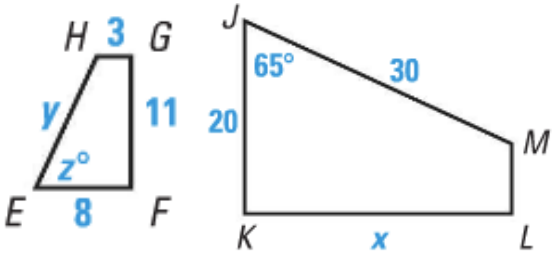
Linear Scale Factor: _____

Similarity Statement: _____

## LEVEL: PROFICIENT

Directions: In the diagram, $JKLM \sim EFGH$.

4)

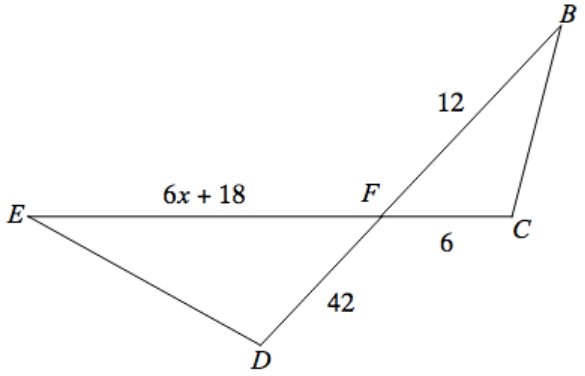



a) Find the scale factor of $JKLM$ to $EFGH$.

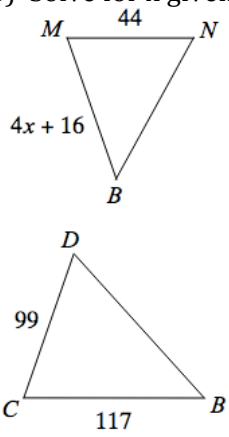
b) Find the values of $x$, $y$, and $z$.

$x =$ _____ $y =$ _____ $z =$_____

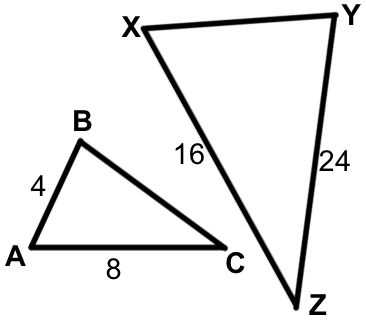
5) Solve for x given that $FDE \sim FCB$



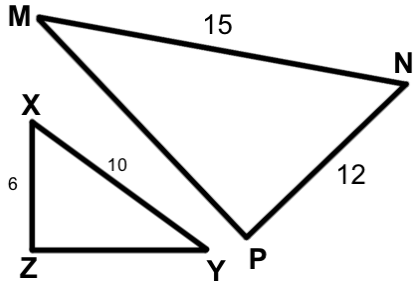

6) Solve for x given that $NMB \sim DCB$



7) $\Delta ABC \sim \Delta XYZ$.
What is $XY$ ?




8) $\Delta XYZ \sim \Delta MNP$.
What is $YZ$ ?




9) Which of the following triangle measurements represents a similar triangle to one with measurements of 32, 11, and 15 inches?

(a) 10.66 in, 3.66 in, and1.66 in
(b) 8 in, 2.75 in, and 5 in
(c) 16 in, 5.5 in, and 7.5 in
(d) 64 in, 22 in, and 30 in
(e)96in, 22 in, and 15 in

10) Which of the following triangle measurements represents a similar triangle to one with measurements of 25, 33, and 42feet?

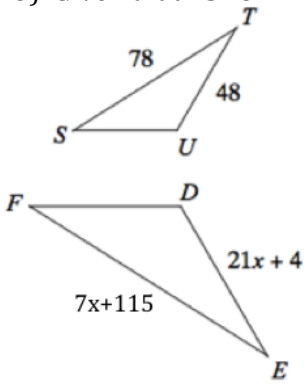
(a) 10ft, 13.2ft, and 16.8ft
(b) 12.5 ft, 1.5ft, and 10.5ft
(c) 75 ft, 99ft, and 126ft
(d) 100 ft, 132ft, and 168ft
(e)50 ft, 66ft, and 84ft

## *LEVEL: MASTERY*

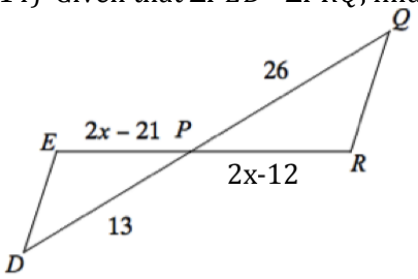
11) Draw and label the sides and angles of two similar triangles.

12) What does it mean if two triangles are similar? Describe relationship between the angles and sides.

13) Given that $\Delta STU \sim \Delta FED$, find $DE$.




14) Given that $\Delta PED \sim \Delta PRQ$, find $EP$.




15) The lengths of the sides of a triangle have the ratio 2:6:7. If the perimeter of the triangle is 45 yards, what is the length of the smallest side?

# Unit 3.1 Worksheet Answers

1. YES, linear scale factor = $\frac{9}{2}$ , similarity statement → $TSU \sim LKM$
2. NO
3. YES, linear scale factor = $\frac{2}{1}$ , similarity statement → $RSTU \sim WXYZ$
4. 
    a. Scale factor = $\frac{5}{2}$
    b. $x = 27.5, y = 12, z = 65°$
5. $x = 11$
6. $x = 9$
7. $XY = 8$
8. $YZ = 8$
9. $C \text{ and } D$
10. $A, D \text{ and } E$
11. Answers may vary
12. Answers may vary
13. $x = 4 \text{ so } DE = 88$
14. $x = 15 \text{ so } EP = 9$
15. 6