Similarity Unit Study Guide

Name: _____

Solve the proportion.

1. $\frac{3}{x} = \frac{2}{7}$

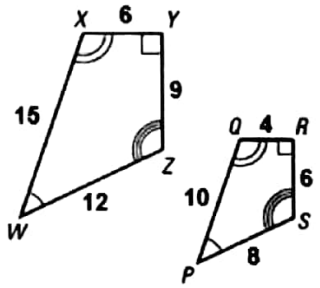
2. $\frac{a+1}{5} = \frac{2a}{9}$

3. $\frac{2}{x+1} = \frac{4}{x+6}$

4. $\frac{d-4}{d} = \frac{3}{7}$

For #'s 5 – 7, use the picture to the right.

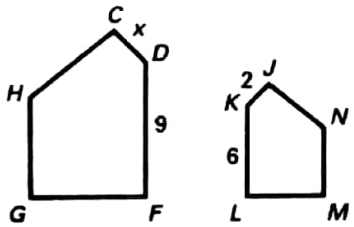
5. Explain mathematically why the following two figures are similar.



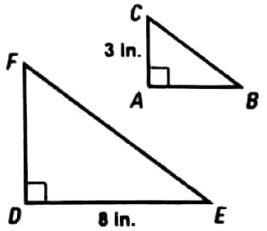
6. Write a similarity statement.

7. Write the statement of proportionality.

8. CDFGH ~ JKLMN. Solve for x.

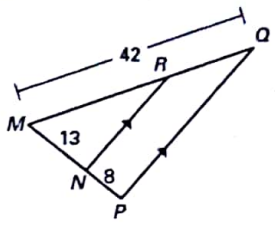


9. The ratios of the side lengths of ΔDEF to ΔABC are 2:1. Find DF and AB.

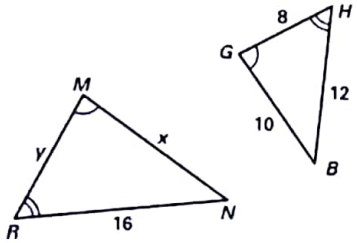


10. The perimeter of a rectangle is 60 cm. The ratio of the lengths of the sides is 3:2. What are the lengths of the sides?

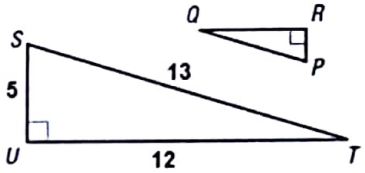
11. Find MR in the figure below.



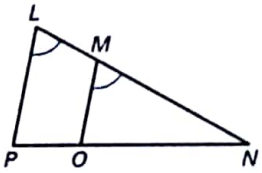
12. ΔMNR ~ ΔGBH. Solve for x and y.



13. ΔSTU ~ ΔPQR. The perimeter of ΔPQR is 18. What the length of $\overline{QR}$?



14. Determine if the following two triangles are similar. If so, state the reason and similarity statement.

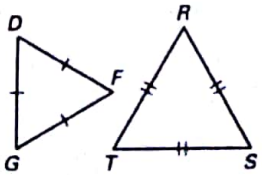


Similar (circle): yes no

Similarity Reason: _____

△LNP ~ △ _____

15. Determine if the following two triangles are similar. If so, state the reason and similarity statement.

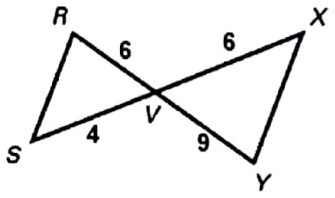


Similar (circle): yes no

Similarity Reason: _____

△DFG ~ △ _____

16. Determine if the following two triangles are similar. If so, state the reason and similarity statement.

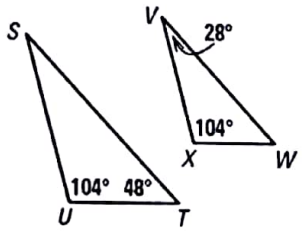


Similar (circle): yes no

Similarity Reason: _____

△RSV ~ △ _____

17. Determine if the following two triangles are similar. If so, state the reason and similarity statement.

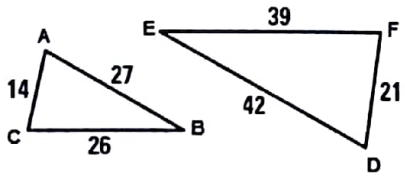


Similar (circle): yes no

Similarity Reason: _____

△SUT ~ △ _____

18. Determine if the following two triangles are similar. If so, state the reason and similarity statement.

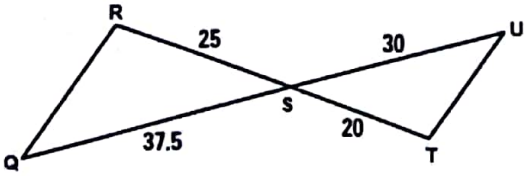


Similar (circle): yes no

Similarity Reason: _____

△ABC ~ △ _____

19. Determine if the following two triangles are similar. If so, state the reason and similarity statement.

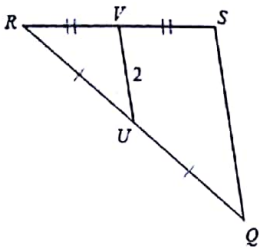


Similar (circle): yes no

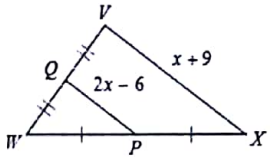
Similarity Reason: _____

△QRS ~ △ _____

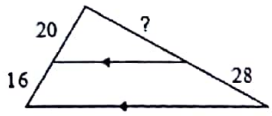
20. Given that $\overline{VU}$ is a midsegment, find SQ.



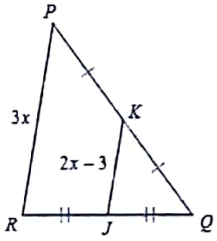
21. Given that $\overline{QP}$ is a midsegment, solve for x:



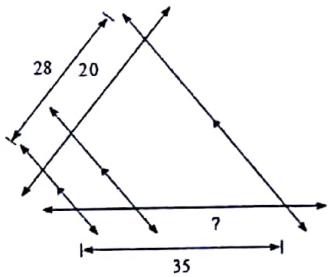
22. Solve for the missing side:



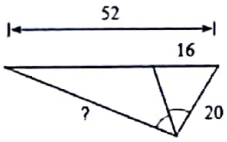
23. Given that $\overline{JK}$ is a midsegment, find PR.



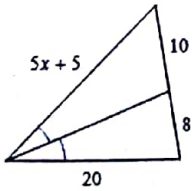
24. Solve for the missing side length:



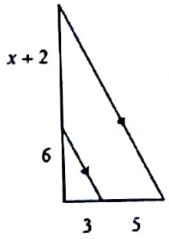
25. Solve for the missing side length:



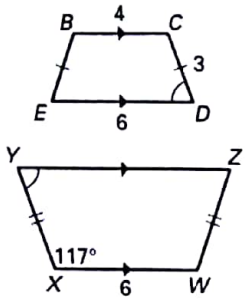
26. Solve for x.



27. Solve for x.



28. In the diagram, BCDE ~ WXYZ. Find the scale factor from WXYZ to BCDE. Write it as a ratio, a fraction, and a decimal.



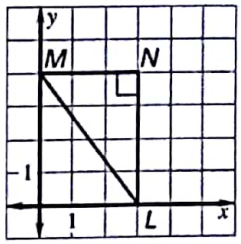
29. Use the origin as the center of the dilation and the given scale factor to find the coordinates of the vertices of the image of the polygon.

k = 2

M' _____

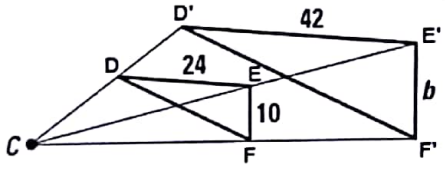
N' _____

L' _____



For #'s 30 – 32, use the diagram to the right.

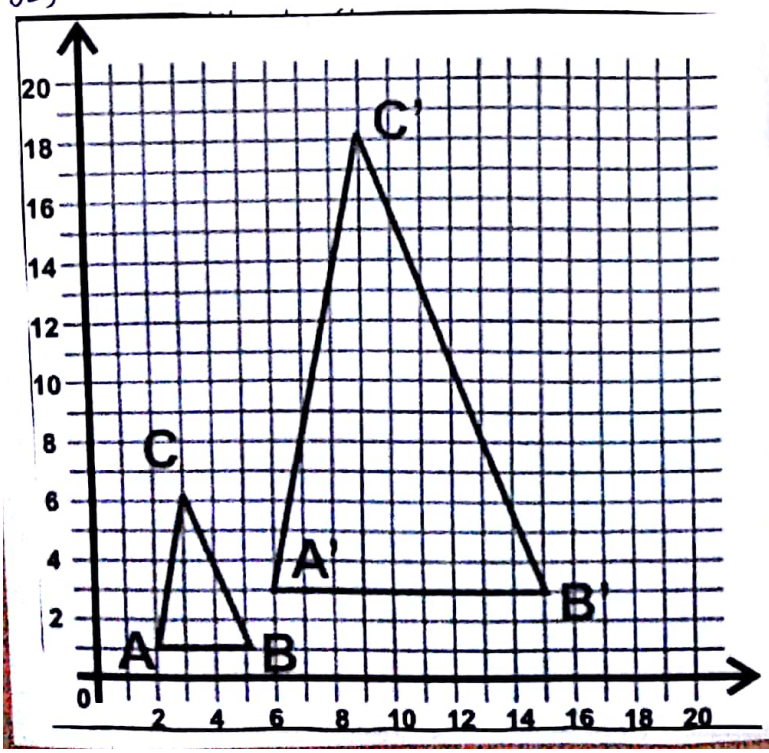
30. Find the scale factor.



31. Is the diagram an example of an enlargement or a reduction? Find the Value of B

Find the center of dilation.

32)



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