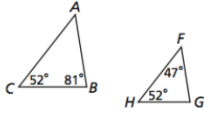


Math 2: Triangle Similarity

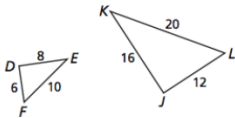
Explain why the triangles are similar and write a similarity statement.

1.



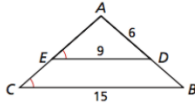
Verify that the triangles are similar.

3. $\triangle DEF$ and $\triangle JKL$

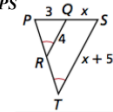


Multi-Step Explain why the triangles are similar and then find each length.

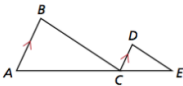
5. AB



7. PS



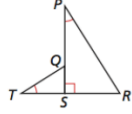
9. Given: $\overline{AB} \parallel \overline{CD}$, $AB = 2CD$, $AC = 2CE$
Prove: $\triangle ABC \sim \triangle CDE$



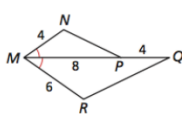
Proof:

Statements	Reasons
1. $\overline{AB} \parallel \overline{CD}$	1.
2. $\angle BAC \cong \angle DCE$	2.
3. $AB = 2CD$, $AC = 2CE$	3.
4. $\frac{AB}{CD} = 2$, $\frac{AC}{CE} = 2$	4.
5. $\frac{AB}{CD} = \frac{AC}{CE}$	5.
6. $\triangle ABC \sim \triangle CDE$	6.

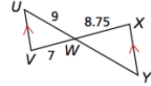
2.



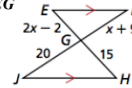
4. $\triangle MNP$ and $\triangle MRQ$



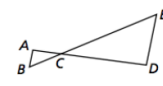
6. WY



8. EG



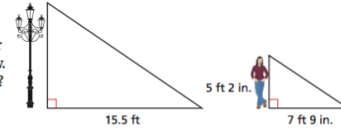
10. Given: $CD = 3AC$, $CE = 3BC$
Prove: $\triangle ABC \sim \triangle DEC$



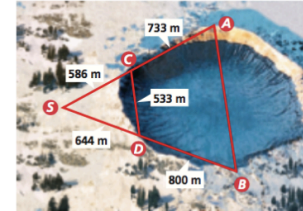
Proof:

Statements	Reasons
1. $CD = 3AC$, $CE = 3BC$	1.
2.	2. Div. Prop. of =
3.	3. Trans. prop. of =
4.	4. Def. of Vertical \angle 's
5.	5.

11. **Measurement** Jenny is 5 ft 2 in. tall. To find the height of a light pole, she measured her shadow and the pole's shadow. What is the height of the pole?



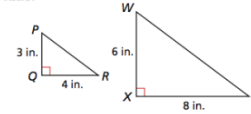
12. **Surveying** In order to measure the distance AB across the meteorite crater, a surveyor at S locates points A , B , C , and D as shown. What is AB to the nearest meter? nearest kilometer?



13. Given that $\triangle PQR \sim \triangle WXY$, find each ratio.

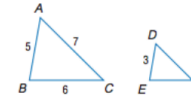
- $\frac{\text{perimeter of } \triangle PQR}{\text{perimeter of } \triangle WXY}$
- $\frac{\text{area of } \triangle PQR}{\text{area of } \triangle WXY}$

c. How does the result in part a compare with the result in part b?

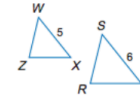


Find the perimeter of the given triangle.

14. $\triangle DEF$, if $\triangle ABC \sim \triangle DEF$, $AB = 5$, $BC = 6$, $AC = 7$, and $DE = 3$



15. $\triangle WZX$, if $\triangle WZX \sim \triangle SRT$, $ST = 6$, $WX = 5$, and the perimeter of $\triangle SRT = 15$



16. **MULTI-STEP PROBLEM** Use the following information about similar triangles $\triangle ABC$ and $\triangle DEF$.

The scale factor of $\triangle ABC$ to $\triangle DEF$ is 15:2.

The area of $\triangle ABC$ is $25x$.

The area of $\triangle DEF$ is $x - 5$.

The perimeter of $\triangle ABC$ is $8 + y$.

The perimeter of $\triangle DEF$ is $3y - 19$.

- Use the scale factor to find the ratio of the area of $\triangle ABC$ to the area of $\triangle DEF$.
- Write and solve a proportion to find the value of x .
- Use the scale factor to find the ratio of the perimeter of $\triangle ABC$ to the perimeter of $\triangle DEF$.
- Write and solve a proportion to find the value of y .
- Writing** Explain how you could find the value of z if $AB = 22.5$ and the length of the corresponding side DE is $13z - 10$.