



- *20 questions
- *Calculators allowed
- *Show all work/steps- use separate paper
- *Recommend time frame 45min -60min

Provide complete explanations in your responses.

Ratios and Proportions

1. What is a ratio?
2. Define proportion?
3. Explain what the “cross product” is and how we use it to solve proportions.
4. Determine if the following statement is true- support your conclusion.

$$\frac{x}{y} = \frac{a}{b} \text{ therefore } \frac{y}{x} = \frac{b}{a}$$

5. Determine if the following statement is true- support your conclusion.

$$\frac{5x}{z} = \frac{e}{f} \text{ therefore } 5xf = ez$$

6. Determine if the following statement is true- support your conclusion.

$$\frac{a}{b} = \frac{c}{d} \text{ therefore } \frac{a+b}{b} = \frac{c+d}{d}$$

7. Write the ratio in simplest form

$$\frac{4x^2z^5}{8x^3z}$$

8. Solve the proportion

$$\frac{3x}{10} = \frac{12}{4}$$

9. Solve the proportion

$$\frac{5}{7} = \frac{x + 1}{2}$$

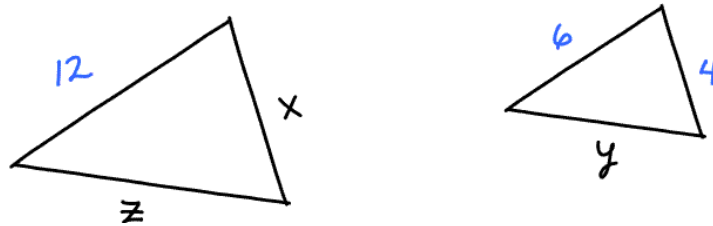
10. Solve the proportion

$$\frac{x}{x + 5} = \frac{x - 4}{x}$$

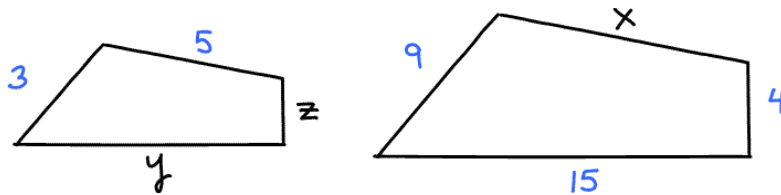
Similar Polygons

11. Explain the difference between congruent and similar polygons.
12. Write the notation that shows triangle ABC is similar to triangle EFG.
13. Similar polygons have congruent angles and their sides are in _____.

14. Given that the polygons are similar find the value of the variables; note if there is not enough information to solve for the values.

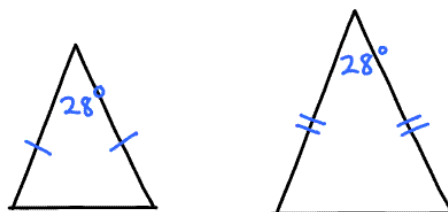


15. Given that the polygons are similar find the value of the variables; note if there is not enough information to solve for the values.

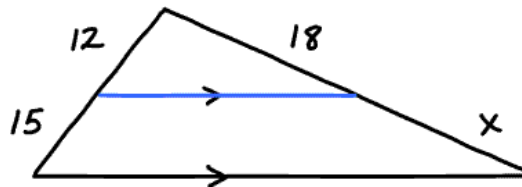


Similar Triangles

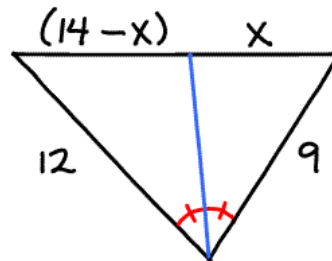
16. If two angles of one triangle are congruent to two angles of another triangle can we conclude that the triangles are similar? Explain.
17. Determine if the triangles are similar. Justify your answer.



18. Find the value of the variable



19. Find the value of the variable



20. Find the value of the variable

