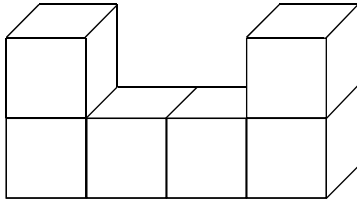


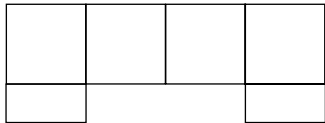
1. How would this block model look from the top?



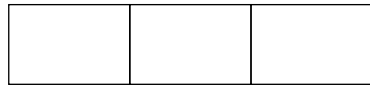
A



B



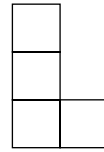
C



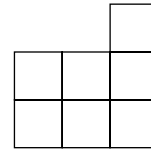
D



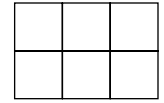
2. What is the **least** number of cubes needed to form a three-dimensional figure with the given left side, front, and top views?



left side



front



top

A 4 cubes

B 6 cubes

C 7 cubes

D 10 cubes

3. Maria has 4 congruent isosceles triangles and a square. The sides of the square are congruent to the base of each triangle. What 3-dimensional figure can Maria make using all of these shapes?

A square prism

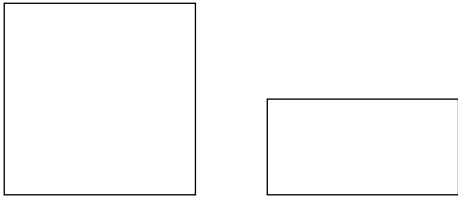
B square pyramid

C triangular prism

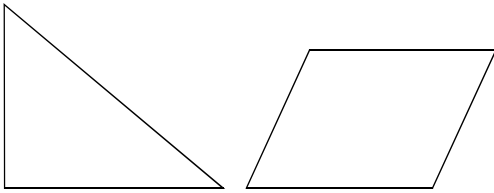
D triangular pyramid

4. Which plane figures are similar?

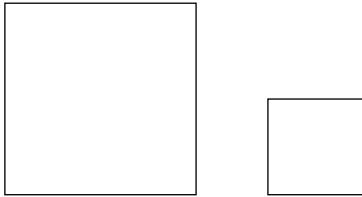
A



B



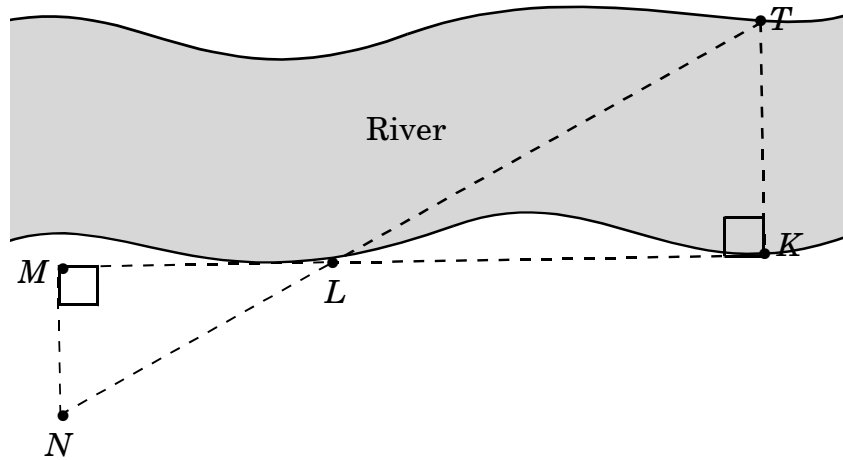
C



D



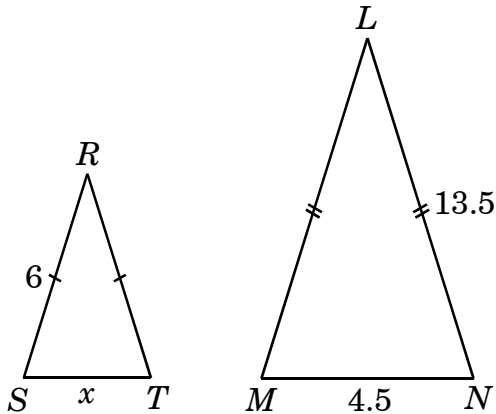
5. Sara used similar triangles to find a relationship between the width of the river and the distance  $MN$ .  $\triangle LMN$  is similar to  $\triangle LKT$ . The measure of angle  $N$  is  $62^\circ$ .



Which angle has the same measure as angle  $N$ ?

- A  $\angle LKT$
- B  $\angle NLM$
- C  $\angle NML$
- D  $\angle LTK$
- 
6.  $\triangle STU \sim \triangle XYZ$ . Which statement must be true?
- A The measure of  $\angle STU$  is half the measure of  $\angle XYZ$ .
- B The measure of  $\angle STU$  is equal to the measure of  $\angle XYZ$ .
- C The measure of  $\angle STU$  is double the measure of  $\angle XYZ$ .
- D The measure of  $\angle STU$  is complementary to the measure of  $\angle XYZ$ .
7.  $\triangle XYZ$  has side lengths of 15 m, 20 m, and 25 m. What could be the side lengths of a triangle similar to  $\triangle XYZ$ ?
- A 5 m, 6 m, and 7 m
- B 3 m, 4 m, and 5 m
- C 5 cm, 10 cm, and 15 cm
- D 30 mm, 40 mm, and 55 mm

8.  $\triangle RST$  is an isosceles triangle with  $\overline{RS} \cong \overline{RT}$ .



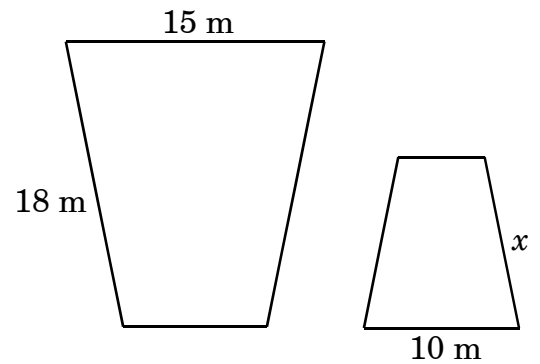
If  $\triangle RST$  is similar to  $\triangle LMN$ , what is the value of  $x$ ?

- A 2
- B 3
- C 4
- D 5

9. The ratio of the dimensions of a rectangular picture is 5 : 4. The shorter dimension is  $6\frac{1}{2}$  inches. What is the longer dimension?

- A  $5\frac{1}{4}$  inches
- B  $7\frac{1}{2}$  inches
- C  $7\frac{3}{4}$  inches
- D  $8\frac{1}{8}$  inches

10. The two polygons below are similar.



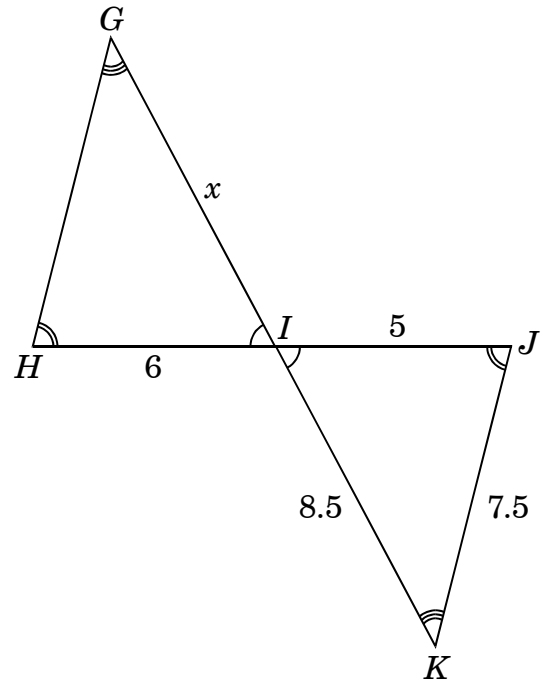
What is the value of  $x$ ?

- A 12 m
- B 13 m
- C 18 m
- D 27 m

11. Rug P and Rug Q are two similar rectangular rugs. The dimensions of Rug P are 4 feet wide by 5 feet long. Rug Q is 8 feet wide. What is the length of Rug Q?

A 15 feet  
 B 10 feet  
 C 8 feet  
 D  $2\frac{1}{2}$  feet

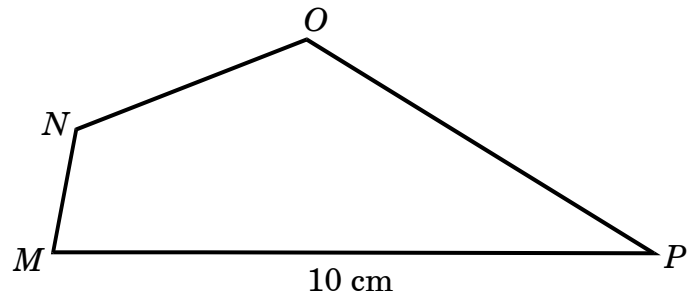
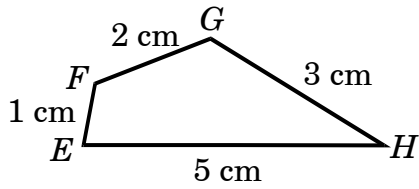
12. In the figure below,  $\overline{GH}$  is parallel to  $\overline{JK}$ , so the two triangles are similar.



What is the value of  $x$ ?

A 4.0  
 B 5.3  
 C 9.0  
 D 10.2

13. Quadrilateral  $EFGH$  is similar to quadrilateral  $MNOP$ .



What is the perimeter of  $MNOP$ ?

- A 19 cm
- B 22 cm
- C 25 cm
- D 31 cm

### End of Sample Items

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