

# Independent Practice: INDIRECT MEASUREMENT

NAME: \_\_\_\_\_

DATE: \_\_\_\_\_

PERIOD: \_\_\_\_\_

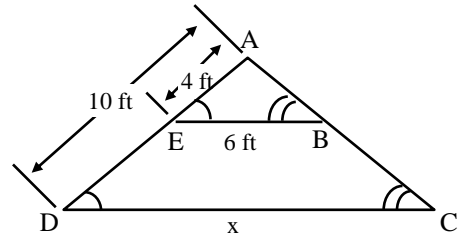
Identify which theorem can be used to determine if the triangles are similar then solve for  $x$ .

1.  $x =$  \_\_\_\_\_

SSS

SAS

AA

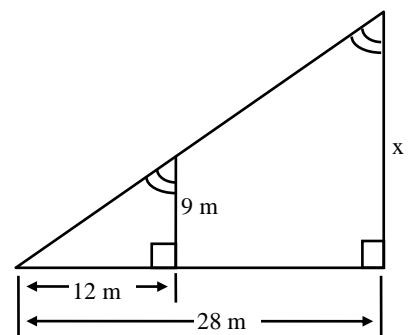


2.  $x =$  \_\_\_\_\_

SSS

SAS

AA



3.  $d =$  \_\_\_\_\_

How far is it from the log ride to the pirate ship?

SSS

SAS

AA



For # 4 – 10, sketch and label a diagram that represents each description then set up and solve a proportion.

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4. \_\_\_\_\_ A 6-foot ladder touches the side of a building at a point 5 feet above the ground. At what height would a 15-foot ladder touch the building if it makes the same angle with the ground as the shorter ladder?

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5. \_\_\_\_\_ A flagpole casts a shadow 3.5 meters long. Anita is standing near the pole. Her shadow is 0.75 meters long. Anita's height is 1.5 meters. How tall is the flagpole?

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6. \_\_\_\_\_ Mrs. Krauss is 5 feet 6 inches tall. She notices that her shadow is 3 feet long and the shadow of a nearby water tower is 75 feet long. Mrs. Krauss would like to know the height of the water tower.

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7.  $d =$  \_\_\_\_\_ On a map, the length from Cleveland to New York is 7 cm, from  
Cleveland to Atlanta is 10 cm, and from New York to Atlanta is 13 cm. If  
 $d =$  \_\_\_\_\_ on a larger map the length from Cleveland to New York is 17.5 cm, what  
are the other lengths?

8. \_\_\_\_\_ To estimate the height of his school's fine arts building, James sights the top of the building's wall in a mirror that he has placed on the ground. The mirror is 4.7 meters from the base of the wall. James is standing 0.9 meter from the mirror, and his height is about 1.85 meters. What is the height of the fine arts building?

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9. \_\_\_\_\_ Charlie walks away from a tree along its shadow until his head is in line with the top of the tree's shadow. Charlie is standing 15 feet from the base of the tree and 6 feet from the end of the shadow. Charlie is 5 feet tall. What is the height of the tree?

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10. \_\_\_\_\_ To find the height of a tree, Wyatt places a mirror so that he can see the top of the tree in the mirror. The mirror is 3 ft from him and 7.5 ft from the tree. If Wyatt is 5.5 ft tall, how tall is the tree?

For # 11 – 12, clearly circle the best answer. Work must be shown in order to receive credit.

11. To estimate the height of her house, Lidia starts by placing a mirror on the ground to sight the top of the structure. She stands 0.75 meters away from the mirror. Her height is 1.5 meters. The mirror is 4.5 meters away from the base of her house. What is the height of her house?

A. 7.5 m

B. 9.0 m

C. 10.5 m

D. 12.0 m

12. There are 25 students in Ms. Leo's math class. The ratio of boys to girls is 2:3. Which equation can be used to determine  $g$ , the number of girls in Ms. Leo's class?

A  $\frac{2}{5} = \frac{g}{25}$

B  $\frac{3}{5} = \frac{g}{25}$

C  $\frac{2}{3} = \frac{g}{25}$

D  $\frac{3}{5} = \frac{25}{g}$