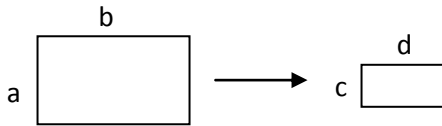


UNIT 7 REVIEW (Math 7+)

Show your work where possible.

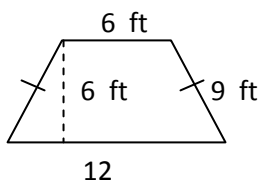
- 1) The side lengths of the figure below are dilated by a scale factor of $\frac{1}{4}$. Which statement describes the figure that results?



- A. The perimeter of the original figure is 8 times the perimeter of the figure that results.
- B. The area of the original figure is 8 times the area of the figure that results.
- C. The perimeter of the original figure is 16 times the perimeter of the figure that results.
- D. The area of the original figure is 16 times the area of the figure that results.
- 2) If the rectangle is dilated by a scale factor of $\frac{1}{2}$ what will be the new area?



- 3) If the quadrilateral below is dilated by a scale factor of $\frac{1}{3}$, what will be the new perimeter?

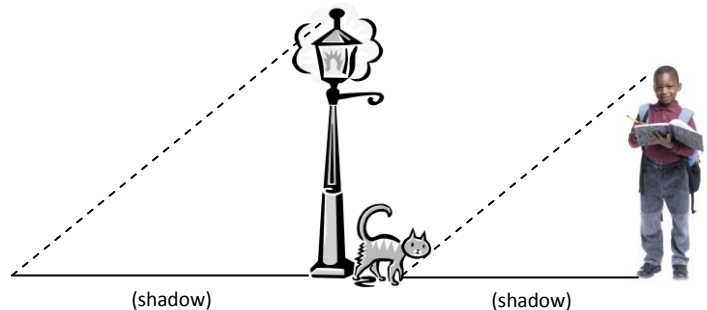


- 4) If the quadrilateral in #3 is enlarged by a scale factor of 3, what will be the new perimeter?

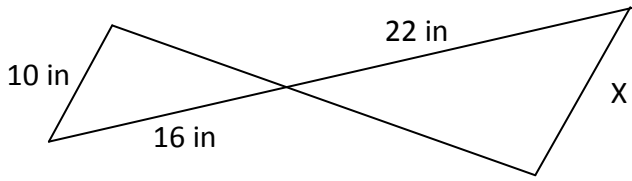
- 5) A 7-foot man casts a shadow of 10 feet. At the same time of day, a nearby tree casts a 35-foot shadow. Using similar triangles, find the height of the tree.

- 6) A lamp post casts a 8-foot shadow at 7:00 AM in the morning. At the same time of day, Sarah's shadow is 3 feet 6 inches long. If Sarah is 5 feet tall, what is the *approximate* height of the lamp post?

- 7) Look at the diagram. Lawrence is 5 feet 3 inches tall & casts a 6-foot shadow. A nearby lamp post casts a 16-foot shadow. How tall is the lamp post?

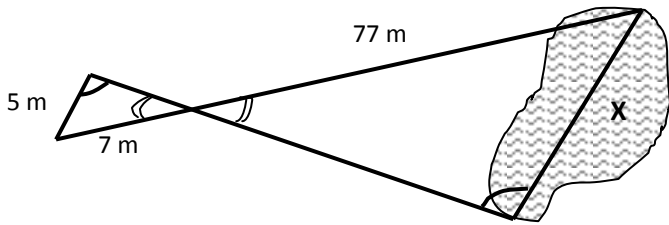


- 8) In the figure below, find the missing length (x). Use a proportion to solve.

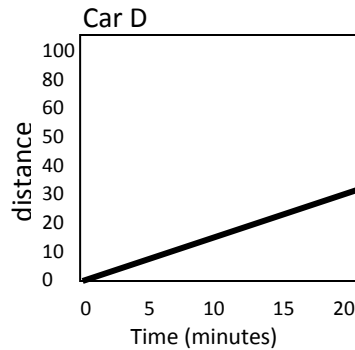
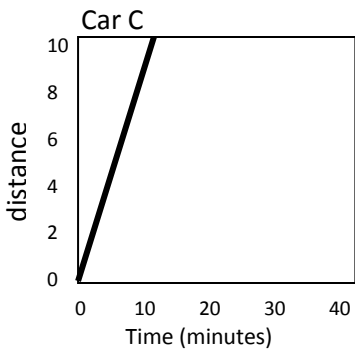
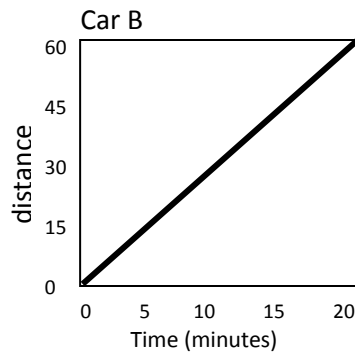
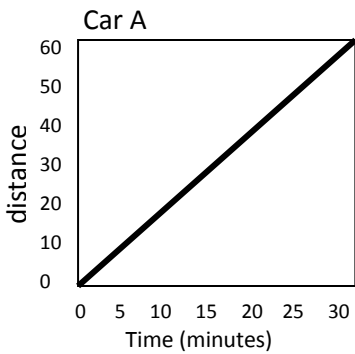


- 9) Sarah is planning to swim across the lake in a nearby park. Before she started to practice, she wanted to know how far she would have to swim. She drew a diagram of the lake.

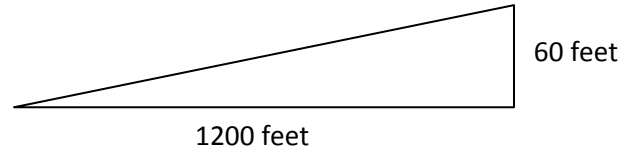
What is the length of the lake that Sarah will swim across?



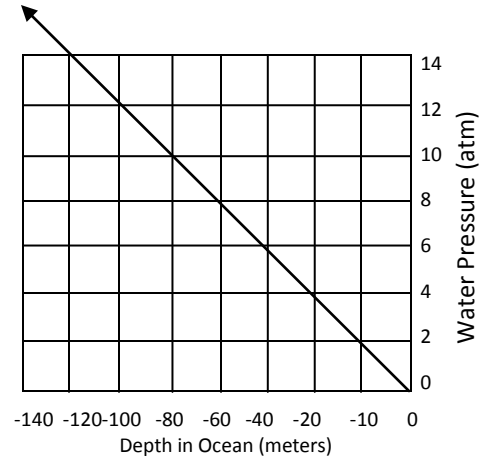
- 10) Which car is traveling at the *fastest* speed?



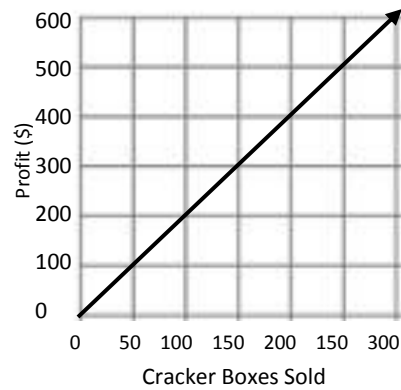
- 11) The diagram represents a run-away emergency truck ramp beside the highway in the mountains. What is the incline slope of the ramp?



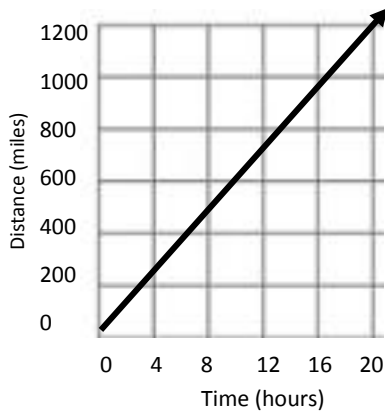
- 12) A submarine must keep track of water pressure as it dives deeper into the ocean. What is the rate of pressure for the sub as it dives under the water?



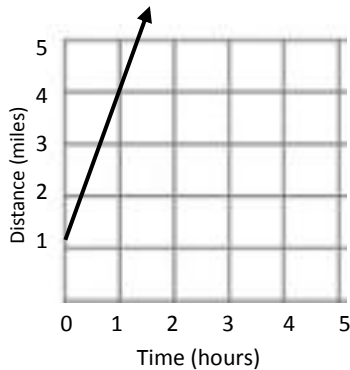
- 13) The graph represents the profit earned on the sale of boxes of crackers. What does the SLOPE represent?



- 14) The graph shows time and distance of a truck run to deliver cars. What does the slope represent?



- 15) The equation representing Ricardo's walking speed is $y = 2x + 3$. Ray's is shown in the graph below. Compare the two boys' walking speed.

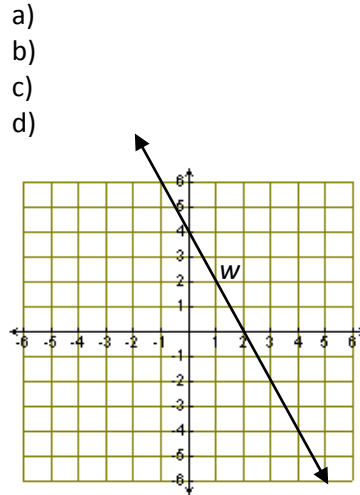


- 16) What is the equation of a line that has a slope of -3 and goes through the origin?
- $y = -3$
 - $y = -3x$
 - $y = x - 3$
 - $y = -3x - 3$

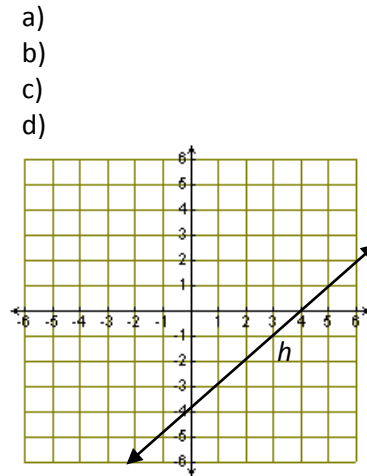
- 17) What is the equation of a line that crosses the y-axis at $(0, -5)$ and has a slope of 2?

-
-
-
- +2

- 18) What equation represents line w ?

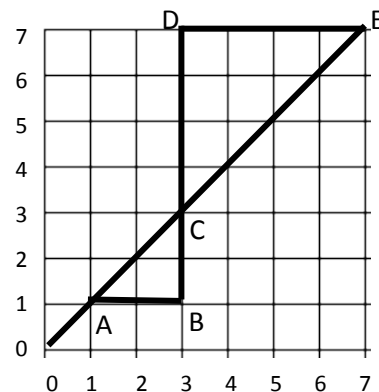


- 19) What equation represents line h ?



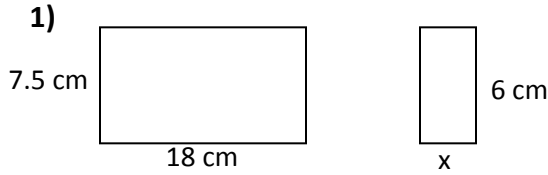
- 20) Look at the graph below, and answer the following questions:

- What is the ratio of BC to AB? _____
- What is the slope of AE? _____
- What is the equation of AE? _____
- Are the triangles similar? _____
Why or why not?



Short Answer

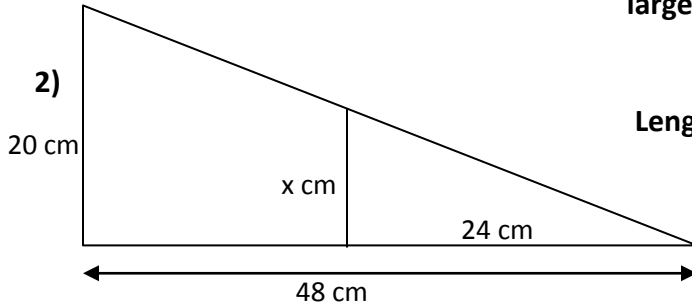
Find the length of the missing side, and determine the Scale Factor.



Length of x: _____

What is the scale factor of the large rectangle to the small rectangle? _____

What is the scale factor of the small rectangle to the large rectangle? _____



Length of x: _____

3) There are two cleaning businesses to choose from: Clean 'n Green and Shine so Fine. Clean 'n Green will charge an initial fee of \$20 dollars, plus \$8 dollars an hour to clean your house. Shine so Fine charges no initial fee but will charge \$10 an hour to clean your house. Write two equations to represent the cost (y) to have each service for (x) hours. Complete the table below and graph each equation in the coordinate grid below.

Hours (x)	Clean 'n Green Cost (y)	Shine so Fine Cost (y)
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Equation : Clean 'n Green _____

Equation: Shine so Fine _____

