Lesson 1 Assignment

Dilations

Work slowly and carefully. If you are having difficulty, go back and review the appropriate *Lesson*.

For full marks, show all calculations, steps, and/or explain your answers.

Total: 22 marks.

*Select the **best** answer for multiple-choice questions 1 and 2, choose the letter of your answer and write it on the line provided.*

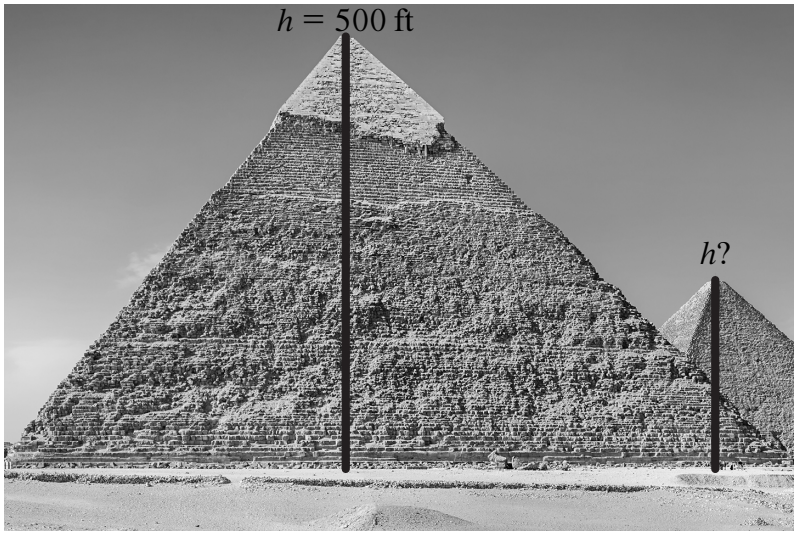
(1) _____ 1. Which scale factor will produce an enlargement when a dilation is applied to a shape or object?

A. 0.1
B. 0
C. 1
D. 10

(1) _____ 2. Which scale factor will produce a reduction when a dilation is applied to a shape or object?

A. 0.1
B. 0
C. 1
D. 10

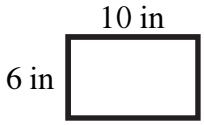
3. A scale factor of 0.4 was applied to the large pyramed, which has a height of 500 ft.



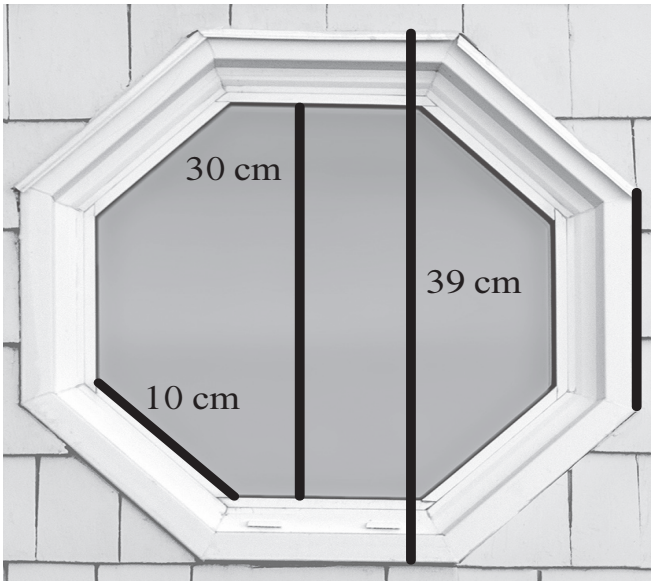
(1) a. What is the height of the small pyramid?

(1) b. What type of dialation was performed?

(2) 4. A rectangle has a length of 10 inches and a width of 6 inches. If the small rectangle is dilated by a factor of 3.5, find the dimensions of the large rectangle.



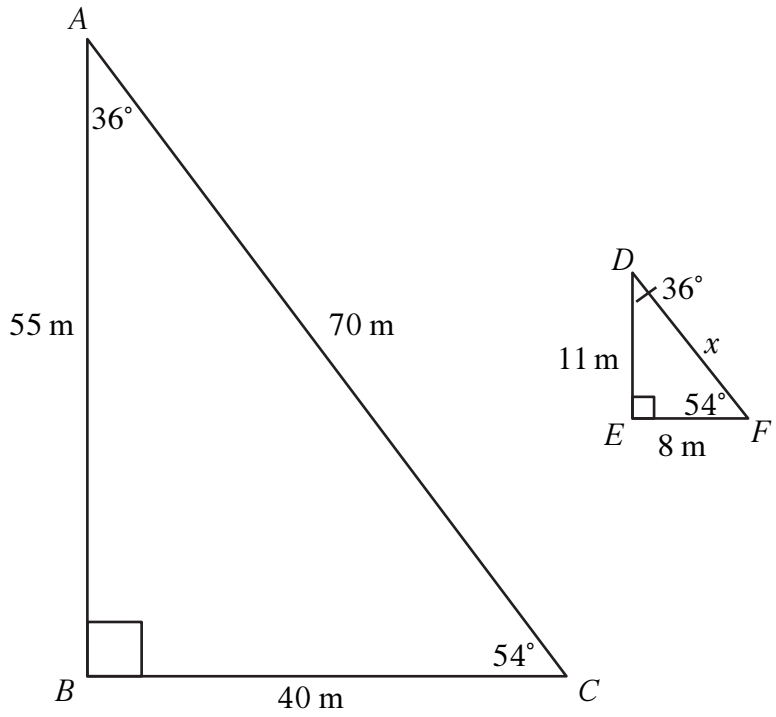
5. The inside of the window frame in the picture below has the shape of a regular octagon. The white outside frame is similar to the window that it surrounds.



(1) a. Find the scale factor that was applied to the window to obtain the outer dimensions of the white frame.

(1) b. What type of dilation was performed?

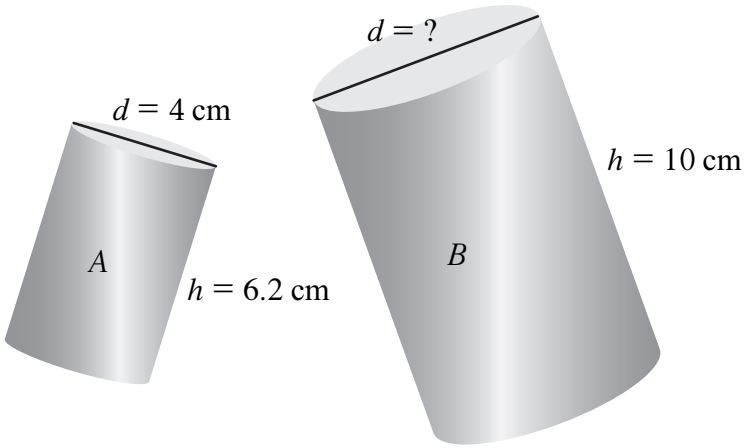
6. Use the two triangles below to answer the following.



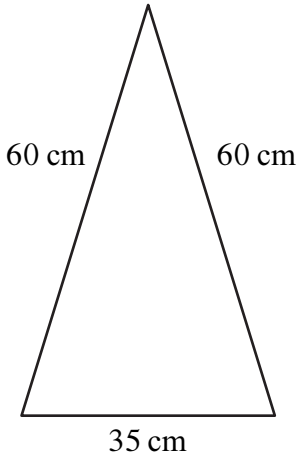
(3) a. Show that the two triangles are similar and find the missing length (represented by x) in the smaller triangle.

(1) b. Find the scale factor that was applied to triangle ΔABC to obtain triangle ΔDEF.

(2) 7. Calculate the diameter of the large cylinder below using the smaller cylinder. Round the answer to 1 decimal place.



(2) 8. Are the two triangles below similar when comparing the side lengths? Justify your answer.



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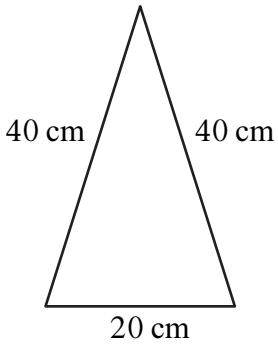

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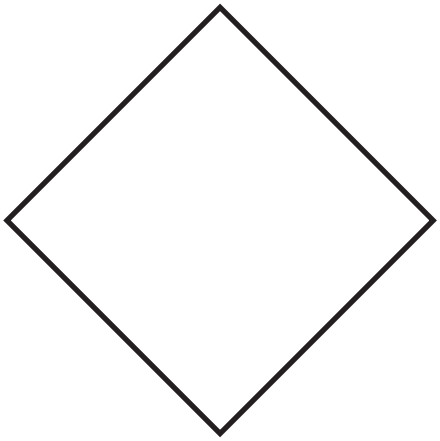
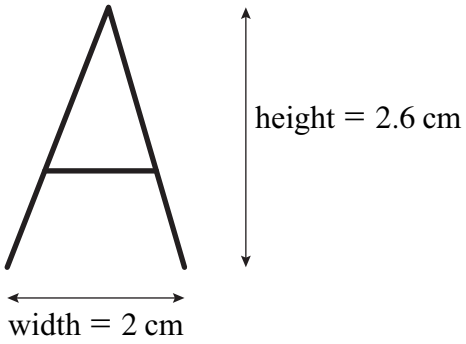
9. The diamond below has side lengths of $4\ \text{cm}$.

(2) a. Draw a diamond that is $\frac{1}{4}$ the size of the original.



(1) b. Explain how the original diamond and its image are proportional.

10. Using the diagram of the letter A to complete the following.



(2) a. Draw a similar letter A that is 2 times larger than the original.

(1) b. Explain how the original A and its image are proportional.