



# Geometry and Measurements

## Worksheet 2

Choice *E*, in multiple-choice questions, is always: *I request help from the teacher.*

You may mark *E* in addition to one other choice if you think that you have the right answer to the question but you do not feel that you have a complete understanding of the problem.

Your teacher will decide whether to use the two-point or four-point scoring rubric for problems that use numbers, pictures, or words to justify/explain your answer(s). You may request help for these questions, too. Write the word “teacher” by your answer(s).

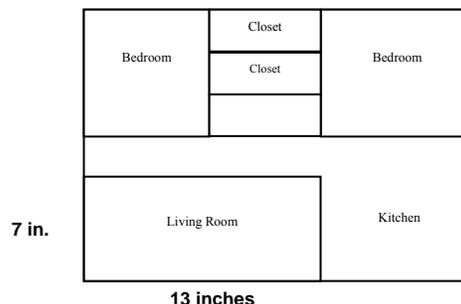
1. Pythagelo has a strange 7 sided garden in back of Etna High school. The garden is a regular polygon. If Pythagelo wants to buy fence to enclose the garden – and each side is 5 meters long, how much fence must he buy? Use numbers, pictures, or words to justify your answer.
2. Chris thought about two different ways to add a ribbon to the pot holding her favorite plant – a ficus tree. She could glue the ribbon to the pot or tie it around it. She decided to tie a ribbon around the circular pot. The pot has a radius of 3 ft. Estimate which length of ribbon could be used by Chris.  
A. 18 ft.                      B. 6 ft.                      C. 20 ft.                      D. 12 ft.                      E. Teacher
3. The student council wanted to put a fence around the flowerbed it planted in the front of Western High School, the new high school in Enigma. The flowerbed is rectangular in shape. The length is 14 ft. and the width 5 ft. How many feet of fencing is needed to enclose the flower garden?  
A. 38 ft.                      B. 19 ft.                      C. 38 sq. ft.                      D. 19 sq. ft.                      E. Teacher
4. Carter accidentally knocked Pythagelo’s picture off the shelf breaking the glass. Carter needs to replace the glass. The glass needs to be 8” x 10”. At the cost of \$0.10 (10¢) per square inch, how much change will Carter get from a \$20.00 bill after he pays for the glass?  
A. \$12.00                      B. \$8.00                      C. \$19.20                      D. \$10.00                      E. Teacher
5. Carter needs one cubic yard of dirt for the part of the school flowerbed for which he agreed to take responsibility. He used a rectangular box which is 3 ft. by 2 ft. by 2 ft. for a planter. It is only half full of dirt so he will need to add more. How much more dirt will he need?  
A. 12 cu. ft.                      B. 15 cu. ft.                      C. 21 cu. ft.                      D. 6 cu. ft.                      E. Teacher
6. The Western High School Spirit Team is putting each football player’s number on flags that are the shape of equilateral triangles. These flags will be hung in the cafeteria. Each side of a flag is 5 inches. The Spirit Team wants to put fringe all the way around each of these flags. If there are 50 players on the team, how many feet of fringe will they need to go around all the flags?  
A. 50.5 ft.                      B. 240 ft.                      C. 100 ft.                      D. 62.5 ft.                      E. Teacher



7. A cylinder with a height of 8 inches and a base with a diameter of 6 inches is standing on its base. A cone with a height of 8 inches and a base with a diameter of 6 inches is also standing on its base next to the cone. Use the formulas:

$$\text{Cone } \frac{1}{2}(\pi d h) + \pi r^2 \qquad \text{Cylinder } 2r\pi h + 2\pi r^2$$

- a. What is the surface area of the cone? Round answer to the nearest whole number.  
b. What is the surface area of the cylinder? Round answers to the nearest whole number.  
c. Use numbers, words, or pictures to explain your answers.
8. A drawing for a house uses the scale of 1 inch = 2 feet. The dimensions of a living room on the drawing are 7 inches by 13 inches.



- a. Determine the actual dimensions of the living room.  
b. Label your answer with appropriate units.
9. Pythagleo is installing floor tiles in part of the janitor's office in the Etna High basement. The space measures 12 feet by 15 feet. Pythagleo is using square tiles with sides that measure 6 inches. How many tiles will it take to cover the entire floor?

A. 180 tiles      B. 300 tiles      C. 720 tiles      D. 1,540 tiles      E. Teacher

10. Enigma's Ohio Flag Works company needs to create a box shaped like a rectangular prism. The volume must be 360 cubic inches, but the surface area needs to be as small as possible. One possible box is shown.

- a. Sketch or describe a different box that has the same volume as Box A, and a surface area less than that of Box A.  
b. Show your work or provide an explanation to verify that the new box meets the criteria.

