

Name _____

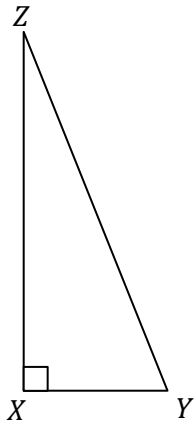
Date _____

When using a calculator to complete the assessment, use the π key and the full display of the calculator for computations.

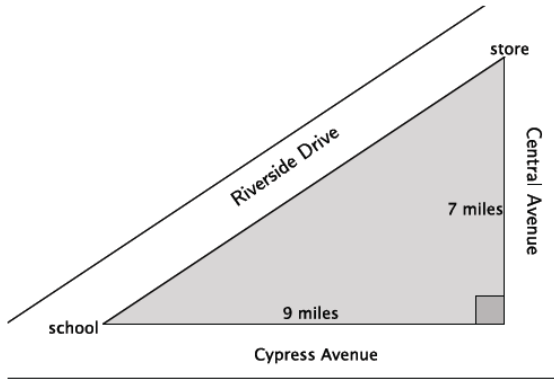
1. a. Is a triangle with side lengths of 7 cm, 24 cm, and 25 cm a right triangle? Explain.

b. Is a triangle with side lengths of 4 mm, 11 mm, and 15 mm a right triangle? Explain.

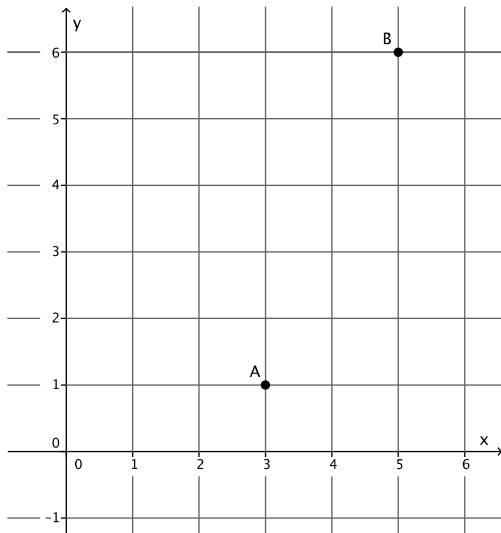
c. The area of the right triangle shown below is 30 ft^2 . The segment \overline{XY} has a length of 5 ft. Find the length of the hypotenuse.



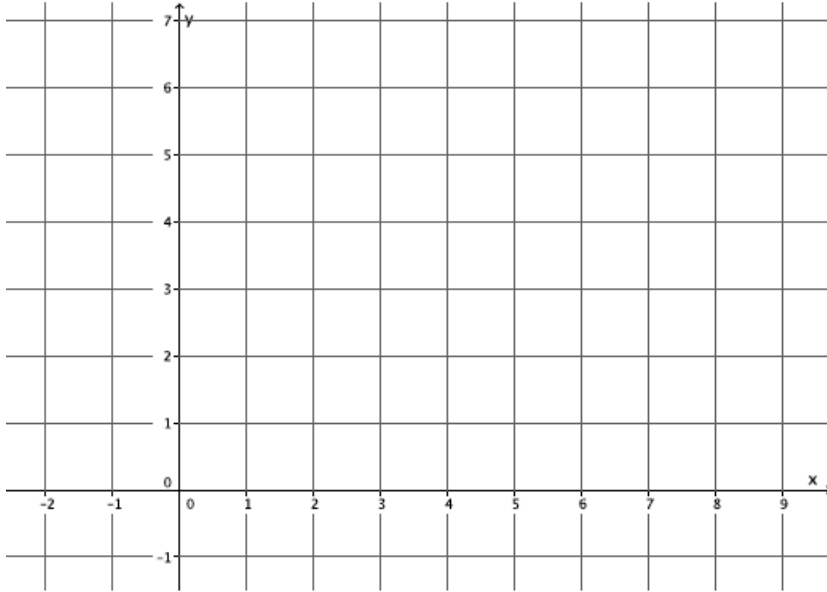
- d. Two paths from school to the store are shown below, one that uses Riverside Drive and another which uses Cypress and Central Avenues. Which path is shorter? By about how much? Explain how you know.



- e. What is the distance between points A and B ?



- f. Do the segments connecting the coordinates $(-1,6)$, $(4,2)$, and $(7,6)$ form a right triangle? Show work that leads to your answer.

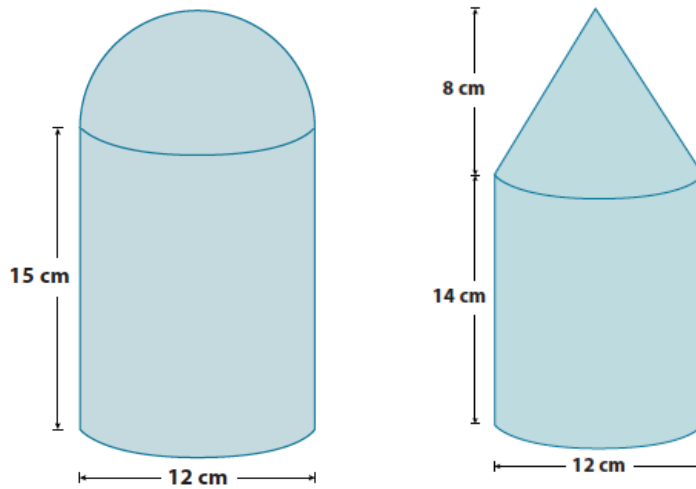


- g. Using an example, illustrate and explain the Pythagorean Theorem.

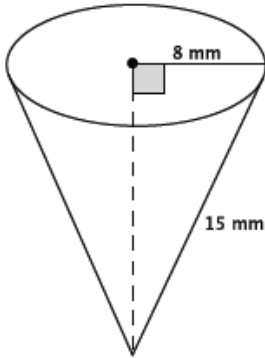
- h. Using a different example than part (g), illustrate and explain the converse of the Pythagorean Theorem.
- i. Explain a proof of the Pythagorean Theorem and its converse.

2. Dorothy wants to purchase a container that will hold the most sugar. Assuming each of the containers below can be completely filled with sugar, write a note recommending a container, including justification for your choice.

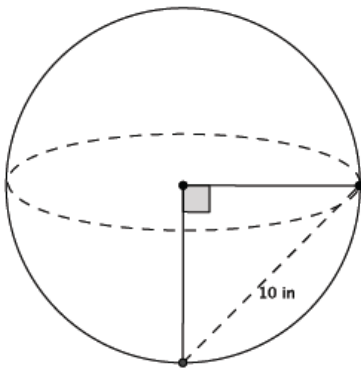
Note: Figures not drawn to scale.



3. a. Determine the volume of the cone shown below. Give an answer in terms of π and an approximate answer rounded to the tenths place.



- b. The distance between the two points on the surface of the sphere shown below is 10 units. Determine the volume of the sphere. Give an answer in terms of π and an approximate answer rounded to a whole number.



- c. A sphere has a volume of $457\frac{1}{3}\pi$ in.³. What is the radius of the sphere?