

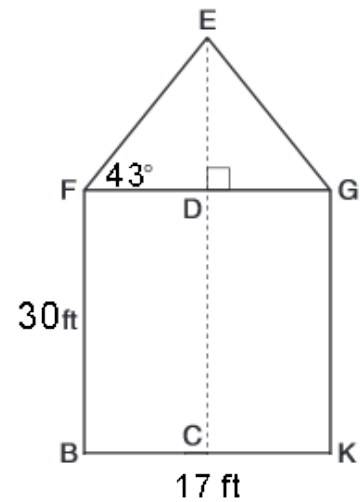
1. A cone shaped candle has a height of 8 inches and a diameter of 3 inches at its base. A cylindrical candle has a height of 5.5 inches and a diameter of 2 inches.



- a. What is the volume of each candle, to the nearest tenth of a cubic inch?
- b. If the wax used to make the candle weighs 0.52 ounces per cubic inch and costs \$2.60 per pound, what is the cost of each candle?

2. A contractor needs to purchase 500 bricks. The dimensions of each brick are 5.1 cm by 10.2 cm by 20.3 cm, and the density of each brick is 1920 kg/m^3 . The maximum capacity of the contractor's trailer is 900 kg. Can the trailer hold the weight of 500 bricks? Justify your answer.

3. The four corn silos in the picture below can each be modeled by the two-dimensional figure beside it. Each silo is composed of a cylinder and a cone. Let C be the center of the base of the cylinder and let D be the center of the base of the cone.



- a. Find the total volume of the corn silos, to the nearest cubic foot.

- b. Corn weighs 45 pounds per cubic foot. If the silos are filled to 90% capacity, how many pounds of corn are in each silo hold, to the nearest pound?

- c. A "bushel" is a measure of capacity used in agriculture that is equal to 1.24 cubic feet. How many bushels of corn are in each silo (assuming they are still filled to 90% capacity)?