

Section 11.7 – Surface Area and Volume Word Problems

Ex 1:

- a) A 10-ounce rectangular box of cereal has dimensions 10 inches by 7 inches by 2 inches. What is the surface area of the box?
- b) Ava made a pencil holder in the shape of an open square prism that has a volume of 96 cubic inches. If the sides of the base are 4 inches long, what is the height?
- c) Lea made two candles in the shape of right rectangular prism. The first candle is 15 cm high, 8 cm long, and 8 cm wide. The second candle is 5 cm higher but has the same length and width. How much additional wax was needed to make the taller candle?
- d) Matt is painting a box in the shape of a rectangular prism that is to be used as a stepping stool. The base of the box is 20 in. by 10 in. and the height is 10 in.. If Matt does not paint the bottom of the box, then how many square inches will be Painted?

e) A classroom globe has a diameter of 18 inches.



What is the approximate surface area, in square inches, of the globe? Round the answer to the nearest tenth decimal place.

(Surface Area = $4\pi r^2$)

f) Vik is constructing a spherical model of Earth for his science fair project. His model has a radius of 5 inches. Since roughly 75% of Earth's surface is covered by water, he wanted to paint 75% of his model blue to illustrate this fact. Approximately how many square inches on his model will be painted blue? Round the answer to the nearest tenth decimal place.

(Surface Area = $4\pi r^2$)