Area of a Circle Word Problems

**PATRIZIA’S PIZZA STAND**

1.) Patrizia sells three sizes of pizzas: small, medium, and large. If a small pizza has a radius of 4 inches, a medium pizza has a radius of 6 inches, and a large pizza has a radius of 8.5 inches, find the following:

   a.) The area of a small pizza (to the nearest tenth)

   b.) The area of a medium pizza (to the nearest tenth)

   c.) The area of a large pizza (to the nearest tenth)

2.) On Friday nights, Patrizia makes a special veggie pizza that has a diameter of 20.5 inches. What is the area of the special veggie pizza (to the nearest inch)?
3.) One large pizza has a diameter of 17 inches and one small pizza has a diameter of 8 inches. If the price of one large pizza is the same as the price of four small pizzas, which option is the better deal?

4.) Bianca sells a special extra-large pineapple pizza that has an approximate area of 615.75 square inches. What is the approximate length of the diameter of an extra-large pineapple pizza (to the nearest inch)?
ANSWER KEY

1.)
   a.) **Small Pizza:** 50.3 square inches
   b.) **Medium Pizza:** 113.1 square inches
   c.) **Large Pizza:** 227.0 square inches

2.) \( A = 330 \) square inches

3.)
   **Area of one Large Pizza:** 227 square inches  
   **Area of one Small Pizza:** 50.3 square inches  
   **Area of 4 Small Pizzas:** \( 50.3 \times 4 = 201.2 \) square inches  
   \( 227 > 201.2 \)  
   One large pizza is a better deal than four small pizzas.

4.)

   \[ A = \pi \times r^2 \]
   \[ 615.75 = \pi \times r^2 \]
   \[ 195.99 \approx r^2 \]
   \[ 196 \approx r^2 \]
   \[ 14 \approx r \]
   \[ 28 \approx d \]

   The diameter is approximately 28 inches.