Quiz 2 Review

Name: _____

A rectangular prism and a cylinder are shown below.

9 in

9 in

9 in

10 in

10 in
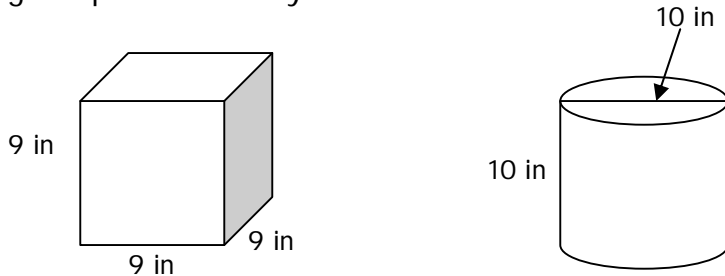
1. Which of the shapes has the greater volume? How much greater? Show how you found your answer.

The cylinder has the greater volume.

It will hold 56.4 in^3 more.

How I found my answer: Rectangular Prism = LxWxH = 9x9x9 = 729 in^3

You could use the formula for a cube for both the volume and the surface area in numbers 1 and 2.

Cylinder = Area of the base x height = $\prod r^2$ x h = 3.14(5)^2 x 10 = 785.4 in^3

785.4 – 729 = 56.4 in^3

2. Which of the shapes has the greater surface area? How much greater? Show how you found your answer.

The rectangular prism has the greater surface area.

It will take 15 in^2 more material to make.

How I found my answer: Rectangular Prism = kiss butt =

(LxW + WxH + LxH) x 2 =

(9x9 + 9x9 + 9x9) x 2 = 486 in^2

Cylinder = 2 x Area of the base + circumference x height =

2$\prod r^2$ + 2$\prod$rh = 3.14(5)^2 x 2 + 2$\prod$(5)10 = 471 in^2

486 – 471 = 15 in^2

3. If you stacked layers of unit cubes and parts of unit cubes inside each shape, how many layers would you need to fill the shape?

This is simply asking the height of each prism.

Rectangular Prism = 9

Cylinder = 10

4. Could you put more unit cubes on one layer covering the base of the rectangular prism or the base of the cylinder? How many more? Show how you found your answer.

The rectangular prism has the greater base.

It will hold 2.46 in^3 more.

How I found my answer: Area of the base-Rectangular Prism = LxW = 9x9 = 81 in^2

You could use the formula for a

Cylinder = Area of the base = $\prod r^2$ = 3.14(5)^2 = 78.54 in^3

81 – 78.54 = 2.46 in^3