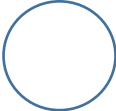
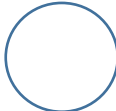






French Fries Performance Task

Jimmy recently visited three local restaurants and ordered fries with all his meals. Each restaurant served the fries in a different shape container. Jimmy wondered at what restaurant was he served the most fries. Answer the following questions to help Jimmy.

1. Jimmy's gives a description of a top and side view of each container. Name the three dimension shape of each container.

Restaurant	Red Robin	Five Guys	In-N-Out
Top View			
Side View			
Three dimension shape			

* 2. Find the volumes of each container. Round all answers to the nearest tenth.

a. Find the volume of Red Robin's container if the diameter is 16cm and the slant height is 17cm.

b. Find the volume of Five Guy's container if the radius is 7cm and the height is 9cm.

c. Find the volume of In-N-Out's container if the height is 10cm, width is 6cm and the length is 14cm.

3. Using your answers in part 2, explain to Jimmy at what restaurant did he get the most fries with his meal and why. (Assume fries were the same shape at all restaurants and containers were filled to the top)

4. Jimmy paid \$4.85 at Red Robin, \$5.60 at Five Guys and \$ 4.00 at In-N-Out for his fries. At what restaurant did Jimmy get the most fries for his money? (Round to the nearest ten thousandths place)

5. If Jimmy wanted all three containers to have an equal volume of 1000cm^3 and could only change the height of each container, what would be the new heights for all three containers? (Round to the nearest tenth)

6. Using the same dimensions in part 2, find the surface area of all three containers.

*Remember the top is open, don't include in surface area! (Round nearest hundredth)

7. All three restaurants make their fry containers out of the same material.

a. If Red Robin pays \$5.00 for $3,500\text{cm}^2$ of material, how many containers can they make?

b. If Five Guys pays \$3.75 for $2,500\text{cm}^2$ of material, how many containers can they make?

c. If In-N-Out pays \$3.00 for $2,000\text{cm}^2$ of material, how many containers can they make?

8. Using the information in part 7, what restaurant pays the least amount per container? Justify using mathematical proof.

True or False?

Show mathematical proof to support each answer. If the statement is false, rewrite the statement to make it true.

1. Find the volume of a rectangular prism if the length is 8ft, width is 6ft and height is 15ft.

a. If you double just the width and height of a rectangular prism then you double its volume. True or False?

b. If you double the width, height, and length of a rectangular prism then you double its volume. True or False?

c. If you double just the width of the prism, then you double its volume. True or False?

2. Find the circumference of a circle with a diameter of 20cm.

a. If you double the radius of a circle then you double the circumference. True or False?

3. Find the volume of a cone if the radius is 7mm and the height is 18mm.

a. If you double just the base radius of the cone then you double its volume. True or false?

Create your own example to prove the following true or false. Show all mathematical work. If the statement is false, rewrite the statement to make it true.

4. If you double the radius of a circle then you double its area.

5. If you double the height and base of a rectangle then you double its area.

6. If you double just the height of a rectangle then you double its area.

7. If you double just the height of a triangle then you double its area.

8. If you double the height of a cylinder then you double its volume.

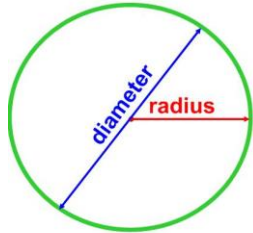
9. If you double the height and base radius of a cone then you double its volume.

10. If you double both the radius and height of a cylinder then you double its volume.

FORMULA SHEET

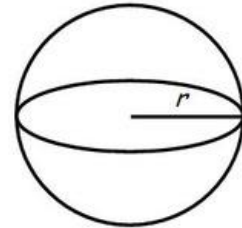
Area of a circle: $A = \pi r^2$

Circumference of a circle: $C = 2\pi r$



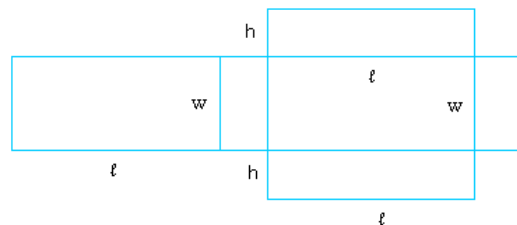
Volume of a sphere: $\frac{4}{3}\pi r^3$

Surface Area of a Sphere: $SA = 4\pi r^2$



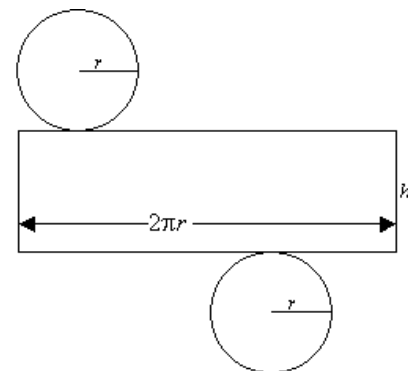
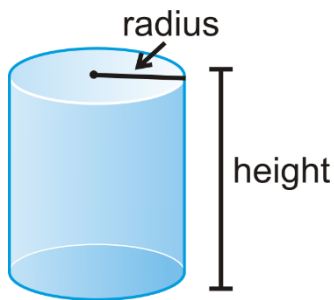
Volume of a rectangular prism: $V = lwh$

Surface Area of a rectangular prism: $SA = 2(lw + lh + wh)$



Volume of a cylinder: $V = \pi r^2 h$

Surface Area of a Cylinder: $SA = 2\pi r^2 + 2\pi rh$



Volume of a Cone: $V = \frac{1}{3}\pi r^2 h$

Surface Area of Cone

$$= \pi r^2 + \pi rs$$

r = radius
h = height
s = length of slant

