

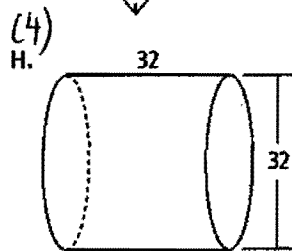
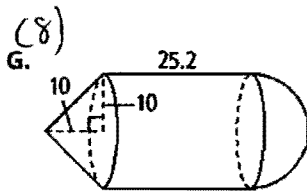
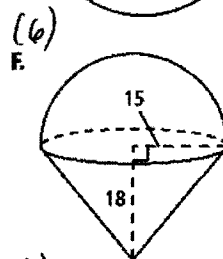
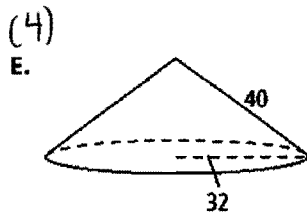
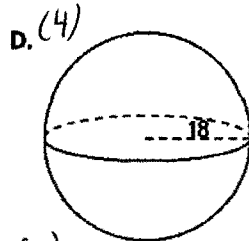
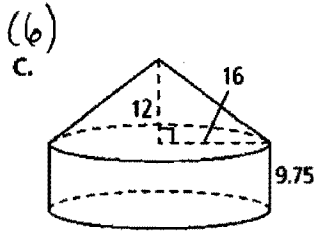
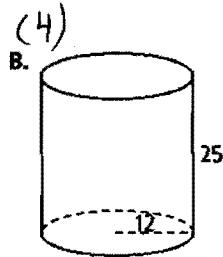
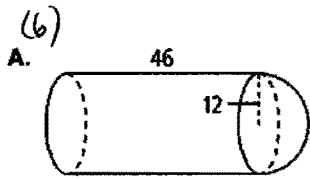
Name: _____

Date: _____

Geometry College Prep
Unit 6: 3-D Geometry Math Investigation

WORTH: 60 POINTS

Find the volume AND surface area of each figure below.





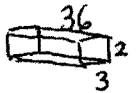
Many companies use packaging to attract consumers into buying their product.

Manufacturers consider dozens of factors before determining which shape will best suit the consumer and boost the company's profits.

Cereal boxes are a common example.

Copy and complete the table below for four different rectangular prisms, each of which has a volume of 216 cm^3 .

Draw the shape to help! Simplify your ratios!



Length (cm)	Width (cm)	Depth (cm)	Volume (V) (cm^3)	Surface Area (S.A.) (cm^2)	Ratio V : S.A.
6	6	6	216	216	$216:216 \rightarrow 1:1$
2	3	36	216	372	$\frac{216}{372} \rightarrow \frac{18}{31}$
3		24	216		
	6	9	216		

Look at the ratio of Volume: Surface Area (V : SA). (6) For table

1. Which of the prisms uses the container material most efficiently? Least efficiently? Explain. (4)

2. Why would a manufacturer be concerned about the ratio of volume to surface area? (4)
(Answers may vary)

3. Why are cereal boxes not shaped to give the greatest ratio of volume to surface area? (4)
(Answers may vary)