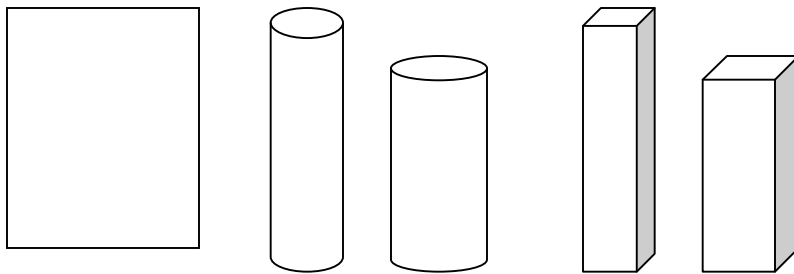


# Quiz Review

1. Jackie has a 6 by 9 inch sheet of paper. She wants to use the paper, without cutting it, to make a container with the greatest possible volume. (She will make the top and bottom from another sheet of paper.) She thought of rolling the paper to make an open-ended cylinder and realized that there are two ways to do this. Her friend Renate suggests folding the paper to make a rectangular prism with square ends. Jackie points out that there are also two ways to fold the paper to make the sides of a prism with a square base.



- a. Which of the four containers has the greatest volume? You may want to make models of the containers to help answer this question.
- b. What is that container's volume?
- c. How much greater is this container's volume than the volume of the other container of the same height?
- d. Write a note to Jackie explaining why this container has the greatest volume.

In 2-10, use this information: Kola Kola is planning to package their cola in a new party-size can in addition to their regular can.



The regular can has a radius of 2 cm and a height of 10 cm. The party-size can has a radius of 14 cm and a height of 40 cm.

2. How many square centimeters of aluminum are needed to make the regular can?  
(Assume Kola Kola's cans have flat bottoms and tops.)
  
3. How many square centimeters of aluminum are needed to make the party-size can?
  
4. How many cubic centimeters of cola will the regular can hold?
  
5. How many cubic centimeters of cola will the party-size can hold?
  
6. How many times greater is the radius of the party-size can than the radius of the regular can?
  
7. How many times taller is the party-size can than the regular can?

8. How many times more square centimeters of aluminum are needed to make just the side (not the bases) of the party-size can than to make the side of the regular can? Explain why the party-size can requires this many *times* more aluminum. (Be specific. Don't just say "because it is bigger.")

9. How many times more cubic centimeters of cola will the party-size can hold than the regular can will hold? Explain why the party-size can holds this many *times* more cola. (Be specific.)

10. If a regular can sells for \$0.25 what should the price of the party-size can be if the company wants to base the price on the amount of cola the can will hold?