

The teacher will need to see all of your work. Check (x) off each one as you use it. Be sure to include the following:

- Pictures, charts, graphs, or t-tables that support your explanation
- A written explanation with detailed sentences
- The equation or number sentence
- The answer (Ask yourself: Is my answer reasonable? Why or why not?)
- The solution in more than one way or related to other situations

Teacher Use Only

Analytical Score:

Understanding N A P E

Strategy/Reasoning N A P E

Communication N A P E

Holistic Score N A P E

Name: _____ Grade: _____ Date: _____

Teacher: _____ School: _____

Packing Predicament

This April, Karen is planning to take a road trip. She is hoping to visit various cities and towns, and participate in an assortment of activities. She would like to bring the following items with her on the trip, and for safety purposes, she would like to fit them all in the trunk of her car.

Determine if Karen will be able to fit all of her vacation items in the trunk of her car.

Items Karen would like to bring on her trip include:

Suitcase (3' x 2' x .75')

Bike (70" x 36" x 9")

Folded Beach Chair (2.5' x 3' x .5')

2 volleyballs in their boxes (10" diameter)

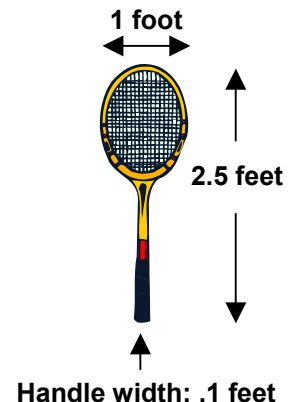
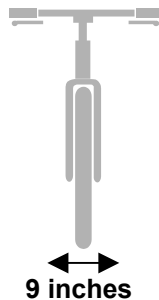
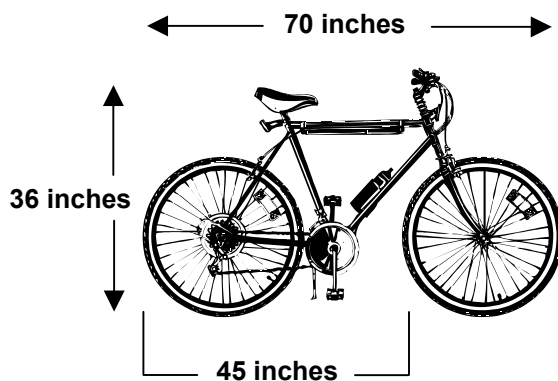
Tennis Racket (2.5' x 1' x .1')

2 Cans of Tennis Balls (cylinders 10" height x 3.5" diameter)

New In-Line skates, still in box (18" x 12" x 6")

Tent rolled up in a box (5' x 1' x 1')

Day Pack (12" x 18" x 6")



The size of Karen’s trunk:

Length: 3.5 feet
Width: 5 feet
Height: 2 feet

- If she is able to fit all of the items, prove this mathematically. Be sure to include the description or visual representation of how she arranged the items so they will fit.
- If she is unable to fit all of the items, prove this mathematically. Give her advice as to what item(s) she should leave behind. Mathematically describe what items she would be able to fit in the trunk. Be sure to include a description, or visual representation, of how she should arrange the items so they will fit.

Formulas:

Volume of a Rectangular Prism:

$$V = Bh \text{ (B= area of base)}$$

Volume of a Cylinder:

$$V = \pi r^2 h$$