

I am creating a starter kit for planting an herb garden. The kit will include the following items at the following costs:

Basil Seeds: \$3.65

Chamomile Seeds: \$3.25

Cumin Seeds: \$3.45

Oregano Seeds: \$3.85

Thyme Seeds: \$7.45

Cilantro Seeds: \$3.65

Sage Seeds: \$7.45

Parsley Seeds: \$3.25

Mint Seeds: \$7.45

Chive Seeds: \$3.45

Propagation Heat Mat: \$35.95

2" Square Peat Pot Kits: \$25.95

Seed Starting Mix: \$11.95

I am going to make a case for the kit using high density plastic which has a density of  $0.97 \text{ g/cm}^3$ . The high density plastic will be  $\frac{1}{16}$ " thick and cost \$0.02 per square inch. The kit needs to be 21 inches long and wide and 10 inches tall.

- 1) Find the density of high density plastic in pounds per cubic inch.
- 2) Determine the cost of the case for my kit if it was a rectangular prism or cylinder (surface area).

Rectangular Prism:

Cylinder:



- 3) Determine the weight of the case for my kit if it was a rectangular prism or cylinder (volume of material and density of material).

Rectangular Prism:

Cylinder:



- 4) Amount of space my kit will take up if it was a rectangular prism or cylinder (volume).

Rectangular Prism:

Cylinder:



- 5) What shape of kit would you recommend I use? Justify your choice using the information from #2-4.

- 6) Determine the total cost of my kit including the case and items in the kit.

- 7) Determine the selling price for my kit if I want to mark up the cost of my kit by 35%.