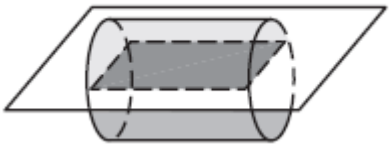
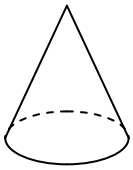
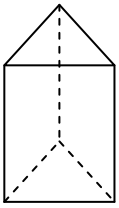
Cross Sections

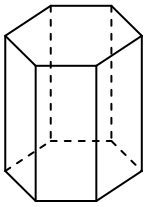
The intersection of a plane slicing through a solid is known as a _____

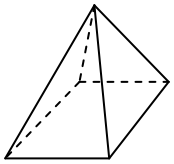


Describe the horizontal and vertical cross sections through the middle for each figure.

A. 

B. 

C. 

D. 

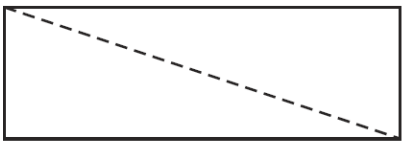
H:_____ H:_____ H:_____ H:_____

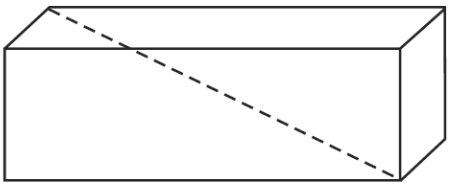
Congruent to Base? Congruent to Base? Congruent to Base? Congruent to Base?

_____ _____ _____ _____

3D Diagonals:

Compare a two-dimensional diagonal to a three-dimensional diagonal.


2-D Diagonal

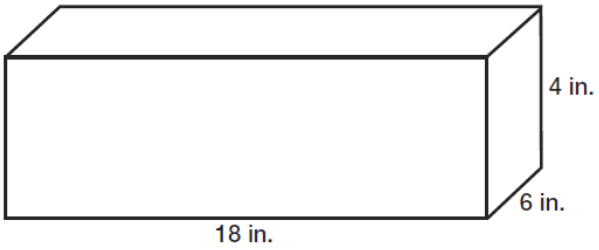

3-D Diagonal

Problem 1:

The dimensions of a rectangular box for long-stem roses are 18 in in length, 6 in in width, and 4 in in height.

You need to determine the maximum length of a long-stem rose that will fit in the box without bending the rose's stem.

a) Draw a 3D diagonal in the box:



b) If the 3D diagonal is the hypotenuse and an edge of the rectangular solid is a leg of the right triangle, where is the second leg?

c) Determine the length of the second leg

d) Determine the length of the 3D diagonal.

Formula for 3D diagonal:

$$d^2 = a^2 + b^2 + c^2$$

Problem 2:

Your new part time job with a landscaping business requires you to transport small trees in your own car. One particular tree measures 8 feet from the root to the top. The interior of your car is 62 inches in length, 40 inches in width, and 45 inches in height. Determine if the tree will fit inside your car.