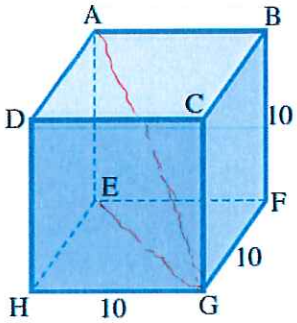
Exercise 1D

Question One:
Calculate the length AG in each of the following

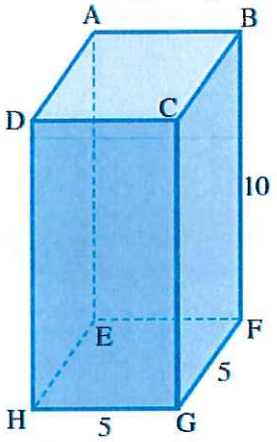
a



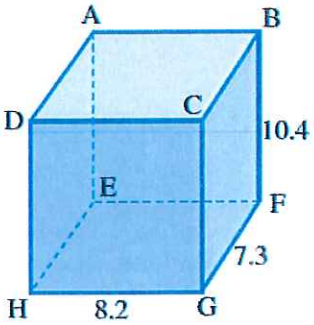
$EG = \sqrt{10^2 + 10^2}$
$= 14.14$

$AG = \sqrt{10^2 + 14.14^2}$
$= 17.32$

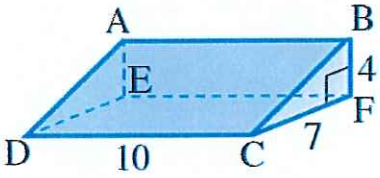
b



c



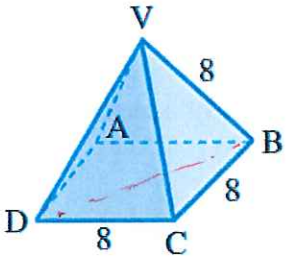
Question Two:
Calculate the length of CE in the wedge, and then AC.



$CE = \sqrt{7^2 + 10^2}$
$= 12.20$

$AC = \sqrt{4^2 + 12.2^2}$
$= 12.85$

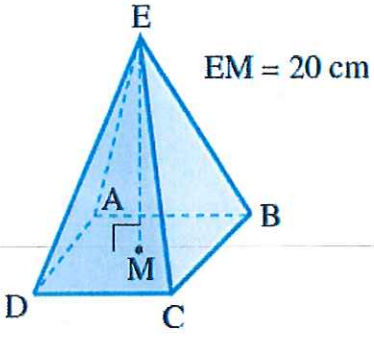
Question Three:
Calculate the length of BD and then the height of the pyramid.



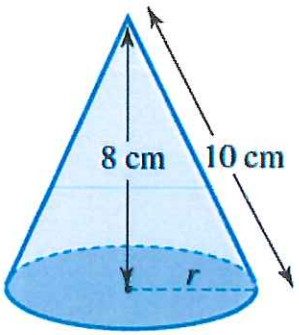
$BD = \sqrt{8^2 + 8^2}$
$= 11.31$

$h = \sqrt{8^2 - 5.66^2}$
$= 5.66$

Question Four:
Pyramid ABCDE has a square base. The pyramid is 20cm high. Each sloping edge measures 30cm. Calculate the length of the sides of the base.

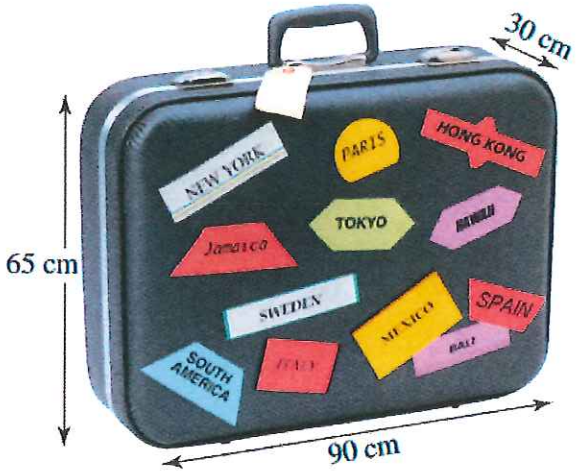


Question Five:
The sloping side of the cone is 10cm and the height is 8cm. What is the length of the radius of the base?



$r = \sqrt{10^2 - 8^2}$
$= 6cm$

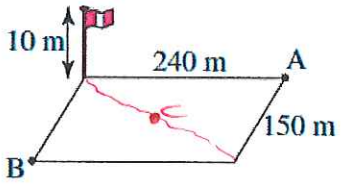
Question Six (extension):
Jodie travels to Bolivia, taking with her a suitcase as shown in the photo. She buys a carved walking stick 1.2 m long. Will she be able to fit it in her suitcase for the flight home?



Flat $c = \sqrt{65^2 + 90^2}$
$= 111.02cm$

Diag = c, 30, 111.02
$= \sqrt{111.02^2 + 30^2}$
$= 115cm$
YES.

Question Seven (extension)
A 10-m high flagpole is in the corner of a rectangular park that measures 240 m by 150 m.



a Calculate:
- i the length of the diagonal of the park
- ii the distance from A to the top of the pole
- iii the distance from B to the top of the pole.

b A bird flies from the top of the pole to the centre of the park. How far does it fly?

(a i) 10, 240, 150, c
$c = \sqrt{240^2 + 150^2}$
$= 283.02m$

(a ii) 10, c, 240m
$c = \sqrt{10^2 + 240^2}$
$= 240.21m$

(a iii) 10, c, 150m
$c = \sqrt{10^2 + 150^2}$
$= 150.33m$

(b) 10, c
$c = \sqrt{\left(\frac{283.02}{2}\right)^2 + 10^2}$
$= 141.86m$