



Name: _____ () Class: _____ Date: _____

MA304.4.2 – 3D Problems

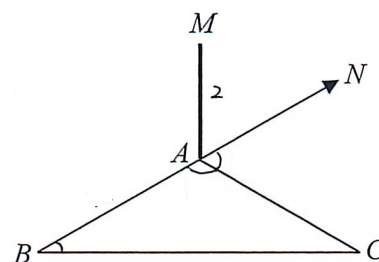
At the end of this unit, you should be able to

- solve three-dimensional problems using trigonometry

With the aid of trigonometry, we can also solve some problems in geometry involving three dimensional figures.

E1. A mast stands vertically at point A such that A , B and C are on level ground with the bearing of C is 100° from A and B is due south of A . Given that $AB = 12$ m, $AC = 8.5$ m and $AM = 2$ m, find

(a) the bearing of C from B ,



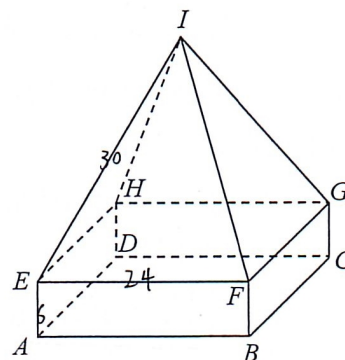
(b) the bearing of B from C ,

(c) the shortest distance from A to the line BC ,

- (d) the angle of elevation of M from D , which is the point of shortest distance from A from the line BC .

P1. A regular square pyramid sits on top of a cuboid such that I lies in the intersection of the diagonals of the square $EFGH$ which is of side 24 cm. If the height of the cuboid is 6 cm and the length of each edge of the pyramid is 30 cm, find

- (a) the angle of elevation of I from E , and



- (b) the angle of elevation of I from A .

P2. Three masts of height 2 m, 5 m and 7.5 m stands vertically at points A , B and C respectively which are on level ground. It is given that $\angle ABC = 50^\circ$, $AB = 4$ m and $BC = 5.6$ m. Denoting the top of the masts by A' , B' and C' in the same order, calculate

(a) the length of AC ,

(b) the angle of elevation of C' from B' , and

(c) the angle of depression of A' from B' .