

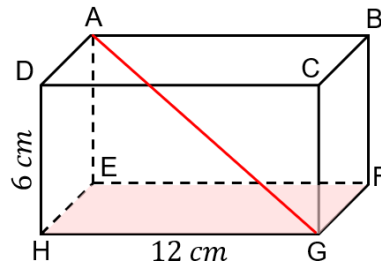
3D Pythagoras and Trigonometry

(a)

The volume of the cuboid ABCDEFGH is 360 cm^3 . Find:

- (a) the length of AD
- (b) the length of AG
- (c) the angle between AG and the plane EFGH

- (a) 5 cm
- (b) 14.3 cm
- (c) 24.8°

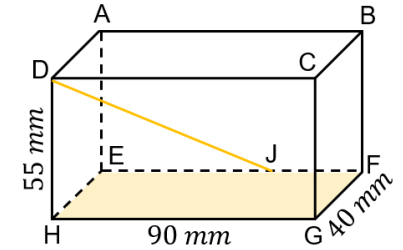


(b)

The point J splits the edge EF in the ratio 2 : 1. Find:

- (a) the length HJ
- (b) the length DJ
- (c) the angle HDJ
- (d) The angle between DJ and the plane EFGH

- (a) 72.1 mm
- (b) 90.7 mm
- (c) 37.3°
- (d) 52.7°



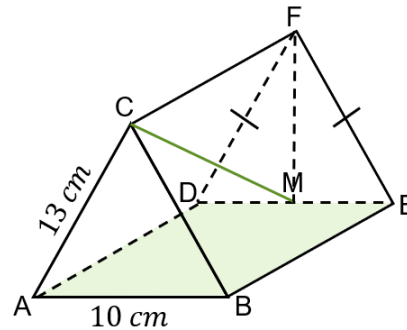
(c)

ABCDEF is a triangular prism with a surface area of 660 cm^2 .

M is the midpoint of DE. Find:

- (a) the length of MF
- (b) the length of BE
- (c) the length of CM
- (d) the angle between CM and the plane ABED

- (a) 12 cm
- (b) 15 cm
- (c) 19.2 cm
- (d) 38.7°



(d)

The volume of the square-based pyramid ABCDE is 180 cm^3 .

M is the centre of the base and is vertically below E. Find:

- (a) the height of the pyramid ME
- (b) the length of AE
- (c) the angle EAM
- (d) the angle between the planes BCE and ABCD

- (a) 15 cm
- (b) 15.6 cm
- (c) 74.2°
- (d) 78.7°

