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| **3D Pythagoras and Trigonometry** | |
| **(a)** | **(b)** |
| The volume of the cuboid ABCDEFGH is . Find:  (a) the length of AD  (b) the length of AG  (c) the angle between AG and the plane EFGH | The point J splits the edge EF in the ratio . Find:  (a) the length HJ  (b) the length DJ  (c) the angle HDJ  (d) The angle between DJ and the plane EFGH |
| **(c)** | **(d)** |
| ABCDEF is a triangular prism with a surface area of 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 | The volume of the square-based pyramid ABCDE is . 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 |