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|  **3D Pythagoras and Trigonometry** |
| **(a)** | **(b)** |
| 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 | 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 |
| **(c)** | **(d)** |
| 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 | 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 |