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A LEVEL MATHS

(71) 3D Coordinates

WORKING AT D/E

(1) Show that the distance from the origin to the point $Q(-2,7,5)$ is $\sqrt{78}$

(2) Find the distance between the points $P(-4,7,-2)$ and $Q(3,5,0)$

(3) Find the coordinates of any point that is a distance of 8 units from O

WORKING AT B/C

(1) The distance $PQ = \sqrt{105}$. Given that $P(-3,2,0)$ and $Q(1,-6,q)$ find the possible values of q.

(2) Find the coordinates of the point on the positive z axis that is a distance of $5\sqrt{5}$ from the point $P(10,3,1)$

WORKING AT A*/A

(1) In the square $ABCD$, $A(-1,4,7)$ and $C(9,10,-1)$ Find the perimeter of $ABCD$.

(2) Points $P(4,0,0)$, $Q(0,4,0)$ and $R(0,0,r)$ form an equilateral triangle.
(a) Write down the possible values of r
(b) Find the exact area of the triangle PQR.

(3) Point $P(-p,-p,-p)$ where p is a positive constant is $3\sqrt{3}$ from O. Find p.