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A LEVEL MATHS

(28) The Geometry of Straight Lines

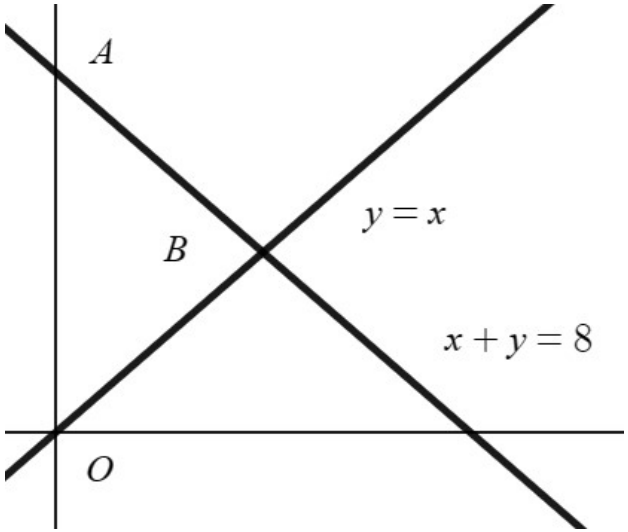
WORKING AT D/E

(1) Find the length of the line segment from $(-1,8)$ to $(7,2)$

(2) The line with equation $x + y = 6$ crosses the x axis at A and the y axis at B. Find the area of the triangle AOB where O is the origin.

WORKING AT B/C

(1) The diagram below shows the graphs of $y = x$ and $x + y = 8$. The lines meet at the point B. Points A and O are where the two lines meet the y axis.



Find the area of ΔAOB

(2) The length of the line segment AB is $4\sqrt{2}$. Given that the coordinates of A and B are $(4,-1)$ and $(8,p)$ respectively, find the possible values of p

(3) The line $y = \frac{5}{2}x - 10$ crosses the coordinate axes at A and B. Find the length of the line AB as a simplified surd.

WORKING AT A*/A

(1) The perpendicular bisector of the line through the points $(-11,8)$ and $(6,4)$ crosses the coordinate axes at A and B. Find the area of triangle AOB where O is the origin. Give your answer in exact form.

(2) A line of gradient 1 passes through the points A $(3,4)$ and B (p,q). Given that the length $AB = 6$, find the possible values of p and q giving your answers in surd form.

(3) The lines with equations $x = 6$ and $y = 2x + c$ enclose a trapezium of area 48 between the two lines, the positive x axis and the positive y axis. Find the value of c.