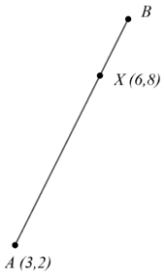
Coordinates & Ratio – www.m4ths.com SB!

(1) The diagram below shows the line AB. The point lies on the line such that $AX:XB = 3:1$



Find the coordinates of B

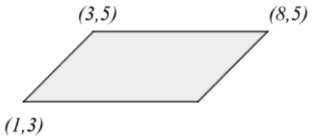
(2) The diagram below shows an isosceles triangle on an set of axes.

One of the vertices has coordinates $(-10,2)$ an another has coordinates $(-7,7)$. Find the coordinates of the the other vertex.

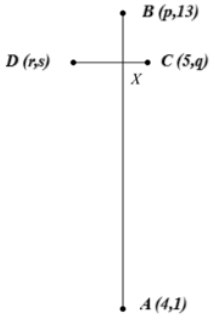
(3) The diagram below shows the line AXB

Find the ratio $AX:XB$ in its simplest form.

(4) The diagram below shows a parallelogram. The coordinates of 3 of the vertices are shown. Find the coordinates of the other vertex.



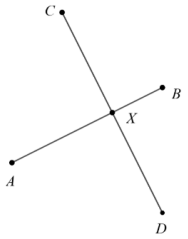
(5) The diagram below shows the **vertical** line AB and the **horizontal** line DC. The two lines meet at the point X.



$AX:XB = 5:1$ and $DX:XC = 2:1$

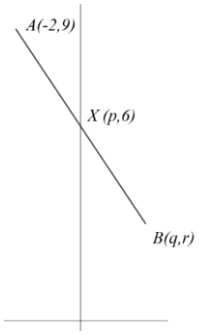
Find the values of p, q, r and s

(6) The diagram below shows two lines AB and CD. The lines intersect at the point X. The ratio $AX:XB = 2:1$ and X is the midpoint of CD.



The coordinates of A are $(1,2)$, the coordinates of C are $(3,8)$ and the coordinates of B are $(7,5)$. Find the coordinates of D.

(7) AXB is a straight line that crosses the y axis as shown below. Given that $AX:XB = 1:1$, find the values of p, q and r.



Lengths of Line Segments

(1) Use Pythagoras theorem to show that the line segment $A(0,0)$ and $B(3,4)$ is 5 units.

(2) Find the length of each line segment AB given the coordinates of each point:

(a) $A\ (1,2)$ and $B\ (7,10)$

(b) $A\ (3,6)$ and $B\ (6,10)$

(c) $A\ (7,1)$ and $B\ (12,13)$

(d) $A\ (-1,3)$ and $B\ (4,-2)$

(e) $A\ (3,5)$ and $B\ (5,8)$

(f) $A\ (5,-2)$ and $B\ (1,-8)$

(g) $A\ (1,-5)$ and $B\ (-2,-4)$

(3) The line with equation $x + y = 6$ crosses the x axis at A and the y axis at B. Show that the length $AB = 6\sqrt{2}$

(4) The line with equation $y = 2x + 4$ crosses the x axis at A and the y axis at B. Find the length of the line segment AB.