Chapter 1

GCSE Revision - Straight Line Equations

1. Finding a gradient

   (a) What is the gradient of the line that goes through the points $(1, 6)$ and $(5, -3)$.

   (b) What is the gradient of the line $x + 2y = 1$?

2. Finding the equation of the line given two points.

   (a) Give the full equation of the line which goes through the points $(3, 5)$ and $(5, 11)$.

   (b) Give the full equation of the line which goes through the points $(5, 1)$ and $(8, -8)$.

   (c) Give the full equation of the line which has the gradient 4 and goes through the point $(0, 3)$.

   (d) Give the equation of the line which has gradient 4 and goes through the point $(3, 7)$.

3. Finding the equation of a line parallel or perpendicular to another.

   (a) Give the equation of the line which is parallel to $y = 4x + 3$ and goes through the point $(4, 5)$.

   (b) Give the equation of the line which is parallel to $y = \frac{1}{3}x - 2$ and goes through the point $(9, 5)$.

   (c) Give the equation of a line which is perpendicular to $y = 2x + 1$.

   (d) Give the equation of the line which is perpendicular to $y = 5x + 6$ and goes through the point $(-15, 2)$.

4. Finding where a line intercepts the x or y axis.

   (a) The y-axis:

   (b) The x-axis:

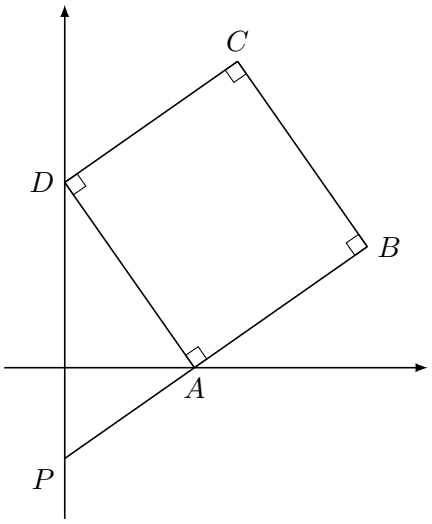
5. At what point does $y = 3x - 2$ intercept:

   (a) The y-axis:

   (b) The x-axis:

6. A and B are straight lines. Line A has equation $2y = 3x + 8$. Line B goes through the points $(-1, 2)$ and $(2, 8)$. Do lines A and B intersect? You must show all your working. **(3)**

7.



$ABCD$ is a square. P and D are points on the y-axis. A is a point on the x-axis. PAB is a straight line.

The equation of the line that passes through the points A and D is $y = -2x + 6$. Find the length of PD. **(4)**

8.

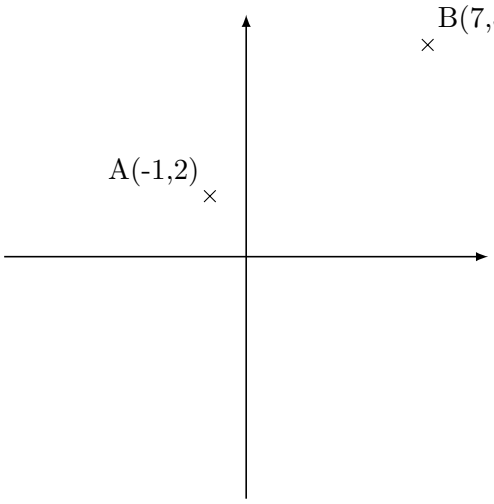


Diagram **NOT** accurately drawn

A is the point $(-1, 2)$. B is the point $(7, 5)$.

(a) Find the coordinates of the midpoint of AB.

(.....,.....)

(b) a