# Mathematics Revision Exercises

Linear Equations and their Graphs

1. Write down the value of the GRADIENT (m) and where each line crosses the Y-axis for the following:-

    a) $y=4x+2$ b) $y=-3x+9$ c) $2y=4x+1$ d) $3x-y=9$ e) $y=x$

2. On coordinate axis, illustrate each of the following lines.

    a) $y=2x-3$ b) $y=4x$ c) $2y=x-1$ d) $3y=x+3$

    e) $y=-2x+4$ f) $2y+2x=-5$

3. On the SAME DIAGRAM, draw the following lines:-

    $y=2x-6$ AND $y=-\frac{1}{2}x+9$ AND $y=\frac{1}{3}x+4$ AND $y=x$ AND $x=6$

    What do do notice about <u>all</u> the above lines?

4. Find the GRADIENT (m) & where the line cuts the y-axis (c) in each of the following. Hence write down the equation of each line.
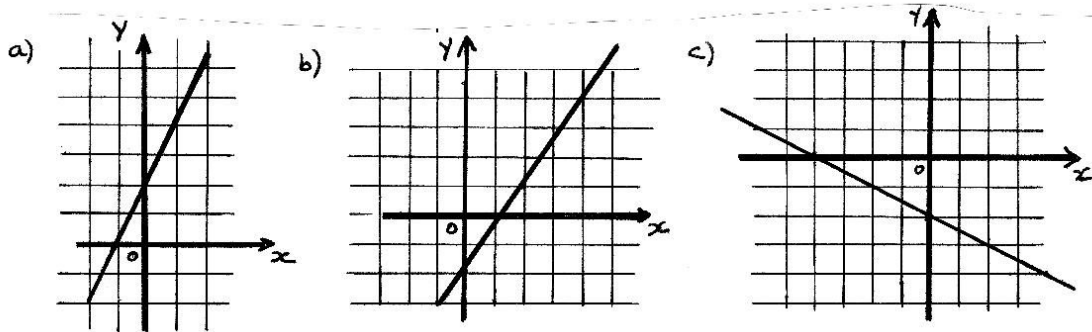
5. Draw a graph to illustrate the solution of the following system of equations;- $2y=x+12$ AND $y+3=3$
   (remember to put them into the general form).
   Verify the intersection of the two lines using an algebraic method.

6. Draw the line $y=2x+4$. Shade in the region where $y>2x+4$.

7. A line goes through the points (0,2) and (3,4). Find the gradient of the line and write down it's equation.

8. A line goes through the points (-4,9) and (1,4). Find the gradient of the line. Given that the line crosses the y-axis at 5, write down the equation of this line.