## Straight line practice questions

1. For each of the following equations write down the gradient and the y-intercept. You may need to rearrange the equation into the form y = mx + c.

(a) y = 8x – 4 (b) 4y = 12x – 1

(c) x + y = 1 (d) 4y = 12 – x

2. Sketch the graphs:

(a) y = 2x – 7 (b) y = 4 – 3x (c) 2y + 3x = 6

Mark clearly the intercepts on both axes.

3. Find the gradient of the line joining each pair of points

(a) (4,2) and (7, 8) (b) (7,4) and (4, 13) (c) (-1, -1) and (8, 3).

4. Write down an equation of the straight line with the gradient given, passing through the point given:

(a) gradient 5; point (1, -2)

(b) gradient -2: point (2, 3)

5. Find an equation of the line through (-4, 3) which is parallel to y = 3x – 8.

6. Find an equation of the line through (-2, 1) which is parallel to y = ½x – 3.

7. Find an equation of the line which passes through the point (1, -1) and is parallel to the line AB where A is the point (-1, 2) and B is the point (0, 4).

8. Work out an equation of the straight line which passes through the two points:

(a) (4, 1) and (1, -3) (b) (-3, 4) and (-1, -4)

9. Find the midpoints of the lines joining.

(a) (2, 4) to (8, 2) (b) (1, -4) to (-3, 10).

10. Find the distance between the points

(a) (4, 1) and (1, -3) (b) (4, -2) and (3, 0) (c) (2.5, 4) and (1, 6)

11. Find an equation of the line which is perpendicular to y = 5 – 3x and passes through the point (6, 1).

12. Find an equation of the line that is parallel to y = 3x – 2 but goes through the point (4, 0)

13. Find an equation of the line which is perpendicular to 2y = 7 – x and goes through (-3, -2).

14. Find the gradients of these lines to determine which are parallel and which are perpendicular. (Hint - There are two pairs of perpendicular lines and one pair and one trio of parallel lines).

a) y = 7 – 2x b) y = 2x - 5 c) 4y = x + 3

d) 5x – y = 7 e) y + 0.5x = 1 f) 4y – x + 4=0

g) 10y = 2 – 2x h) y + 2x = 6 i) 2y + 4x = 5

15. Find the equation of the perpendicular bisector of the points (2, -2) and (6, 4). Illustrate your solution on a sketch graph.