**Parallel Equations of Straight Line Graphs GREEN**

Calculate the equations for the graphs described below.

1) Parallel to y = 3x – 18 and goes through (3,2).

2) Parallel to y = 5x + 10 and goes through (4, 10).

3) Parallel to y = 2x + 5 and goes through (1, 18).

4) Parallel to y = 4 - 2x and goes through (3, 1).

5) Parallel to y = -3x + 5 and goes through (-6, 3).

Calculate the equations for the graphs described below.

6) Perpendicular to y = 2x + 4 at (2, 8).

7) Perpendicular to y = 4x + 5 at (4, 16).

8) Perpendicular to y = -½x + 4 at (2, 3).

9) Perpendicular to y = - $\frac{3}{2}$x + 4 at (6, -2).

10) Perpendicular to y = ½x + 3 at (3, 6).

**Parallel Equations of Straight Line Graphs AMBER**

Parallel graphs have the same gradient. Use the given coordinate to substitute into y = mx + c to calculate the y-intercept.

Calculate the equations for the graphs described below.

1) Parallel to y = 3x – 18 and goes through (3, 2).

 y = 3x

2) Parallel to y = 5x + 10 and goes through (4, 10).

3) Parallel to y = 2x + 5 and goes through (1, 18).

4) Parallel to y = 4 - 2x and goes through (3, 1).

5) Parallel to y = -3x + 5 and goes through (-6, 3).

Gradients of perpendicular graphs have a product of -1. Use the given coordinate to substitute into y = mx + c to calculate the y-intercept.

Calculate the equations for the graphs described below.

6) Perpendicular to y = 2x + 4 at (2, 8).

-1 ÷ 2 = ½

 y = -½x

7) Perpendicular to y = 4x + 5 at (4, 16).

8) Perpendicular to y = -½x + 4 at (2, 3).

9) Perpendicular to y = - $\frac{3}{2}$x + 4 at (6, -2).

10) Perpendicular to y = ½x + 3 at (3, 6).

**Parallel Equations of Straight Line Graphs RED**

Parallel graphs have the same gradient. Use the given coordinate to substitute into y = mx + c to calculate the y-intercept.

Calculate the equations for the graphs described below.

1) Parallel to y = 3x – 18 and goes through (3, 2).

Rearrange to calculate c.

 2 = 3(3) + c

 y = 3x

2) Parallel to y = 5x + 10 and goes through (4, 10).

 y = 5x

3) Parallel to y = 2x + 5 and goes through (1, 18).

4) Parallel to y = 4 - 2x and goes through (3, 1).

5) Parallel to y = -3x + 5 and goes through (-6, 3).

Gradients of perpendicular graphs have a product of -1. Use the given coordinate to substitute into y = mx + c to calculate the y-intercept.

Calculate the equations for the graphs described below.

6) Perpendicular to y = 2x + 4 at (2, 8).

Rearrange to calculate c.

-1 ÷ 2 = -½ 8 = -½(2) + c

 y = -½x

7) Perpendicular to y = 4x + 5 at (4, 16).

-1 ÷ 4 = -¼

 y = -¼x

8) Perpendicular to y = -½x + 4 at (2, 3).

9) Perpendicular to y = - $\frac{3}{2}$x + 4 at (6, -2).

10) Perpendicular to y = ½x + 3 at (3, 6).