

## Equation of a Straight Line - Past Paper Questions - ANSWERS

1)  $2x + y = 3$   
 $y = -2x + 3$   
 Graph D  
 Negative gradient  
 Positive y-intercept

2a)  $m = \frac{6 \cdot 60 - 1 \cdot 80}{4 - 0} = \frac{4 \cdot 80}{4} = 1 \cdot 20$

$c = 1 \cdot 80$

$y = 1 \cdot 20x + 1 \cdot 80$

$f = 1 \cdot 20d + 1 \cdot 80$

2b)  $f = 1 \cdot 20 \times 7 + 1 \cdot 80 = 10 \cdot 20$   
 £10.20

3a)  $m = \frac{12-0}{0-8} = \frac{12}{-8} = -\frac{3}{2}$

$c = 12$

$y = -\frac{3}{2}x + 12$

3b)  $8 = -\frac{3}{2}x + 12$

$-4 = -\frac{3}{2}x$

$-8 = -3x$

$x = \frac{8}{3}$

$P\left(\frac{8}{3}, 8\right)$

4)  $m = \frac{15-5}{3-(-2)} = \frac{10}{5} = 2$

$y - b = m(x - a)$

$y - 15 = 2(x - 3)$

$y - 15 = 2x - 6$

$y = 2x + 9$

5a)  $y = \frac{1}{3}x + 2$

$0 = \frac{1}{3}x + 2$

$-2 = \frac{1}{3}x$

$-6 = x$

$B(-6, 0)$

5b)  $x < -6$

6a)  $m = \frac{33-21}{15-9} = \frac{12}{6} = 2$

$y - b = m(x - a)$

$y - 21 = 2(x - 9)$

$y - 21 = 2x - 18$

$y = 2x + 3$

6b)  $y = 2 \times 20 + 3 = 43$

7)  $m = \frac{18-0}{0-9} = \frac{18}{-9} = -2$

$c = 18$

$y = -2x + 18$

8)  $m = \frac{6-2}{5-0} = \frac{4}{5} = 0 \cdot 8$

$c = 2$

$y = 0 \cdot 8x + 2$

$f = 0 \cdot 8d + 2$

9)  $m = \frac{12-8}{6-0} = \frac{4}{6} = \frac{2}{3}$

$c = 8$

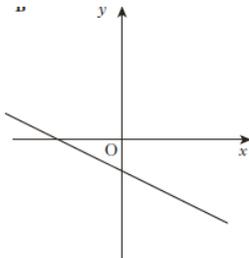
$y = \frac{2}{3}x + 8$

10)  $m = \frac{4-6}{1-0} = \frac{-2}{1} = -2$

$c = 6$

$y = -2x + 6$

11)



12a)  $m = \frac{3-(-7)}{4-(-1)} = \frac{10}{5} = 2$

12b)  $y = 2x - 5$

12c)  $k = 2 \times 3k - 5$

$k = 6k - 5$

$5 = 5k$

$k = 1$

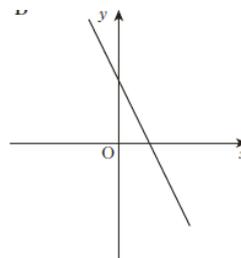
13)  $m = \frac{82-12}{90-0} = \frac{70}{90} = \frac{7}{9}$

$c = 12$

$y = \frac{7}{9}x + 12$

$g = \frac{7}{9}h + 12$

14)



$$15) \quad m = 4$$

$$16a) \quad m = \frac{55-10}{60-0} = \frac{45}{60} = \frac{3}{4}$$

$$c = 10$$

$$y = \frac{3}{4}x + 10$$

$$16b) \quad y = \frac{3}{4} \times 80 + 10$$

$$y = 60 + 10 = 70$$

$$17) \quad m = \frac{9-3}{8-0} = \frac{6}{8} = \frac{3}{4}$$

$$c = 3$$

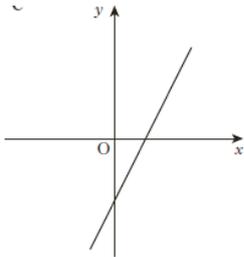
$$y = \frac{3}{4}x + 3$$

$$18) \quad m = \frac{4-0}{0-3} = -\frac{4}{3}$$

$$c = 4$$

$$y = -\frac{4}{3}x + 4$$

19)



$$20a) \quad 4x + 3y = 36$$

$$0 + 3y = 36$$

$$y = 12$$

$$A(0,12)$$

$$20b) \quad 4x + 3y = 36$$

$$4x + 3 \times 8 = 36$$

$$4x = 12$$

$$x = 3$$

$$C(3,8)$$

$$21) \quad m = \frac{-4-5}{7-(-3)} = \frac{-9}{10} = -\frac{9}{10}$$

$$22) \quad m = \frac{8-0}{0-6} = \frac{8}{-6} = -\frac{4}{3}$$

$$c = 8$$

$$y = -\frac{4}{3}x + 8$$

$$23) \quad m = \frac{5-2}{2-1} = \frac{3}{1} = 3$$

$$c = -1$$

$$y = 3x - 1$$

$$24) \quad m = \frac{-3-(-11)}{0-(-2)} = \frac{8}{2} = 4$$

$$c = -3$$

$$y = 4x - 3$$

$$25) \quad m = \frac{5-3}{2-1} = \frac{2}{1} = 2$$

$$c = 1$$

$$y = 2x + 1$$

$$26) \quad m = -30$$

$$c = 150$$

$$y = -30x + 150$$

$$V = -30t + 150$$

$$27) \quad m = \frac{10-5}{2-0} = \frac{5}{2}$$

$$c = 5$$

$$y = \frac{5}{2}x + 5$$

$$28a) \quad m = \frac{500-200}{25-5} = \frac{300}{20} = 15$$

$$y - 200 = 15(x - 5)$$

$$y - 200 = 15x - 75$$

$$y = 15x + 125$$

$$C = 15F + 125$$

$$28b) \quad C = 15 \times 40 + 125 = 600 + 125 = 725$$