

Coordinate Geometry

Term 1 Wk 3

Date:

No.

1a. $3x - 4y = 24$
 $A = (a, 0) \quad B(0, b)$
 when $y = 0$
 $3x = 24$
 $x = 8$
 $\therefore A$ is $(8, 0)$ #

when $x = 0$
 $-4y = 24$
 $y = -6$
 $\therefore B$ is $(0, -6)$ #

1b. $3x - 24 = 4y$
 $y = \frac{3}{4}x - 6$
 Gradient $= \frac{3}{4}$ #

1c. $A(8, 0) \quad B(0, -6)$
 $AB = \sqrt{(8-0)^2 + (0+6)^2}$
 $= \sqrt{64 + 36}$
 $= \sqrt{100}$
 $= 10$ units #

1d. $m = \left(\frac{8+0}{2}, \frac{0+(-6)}{2} \right)$
 $= (4, -3)$

1e. Gradient of $OM = \frac{0+3}{0-4}$
 $= -\frac{3}{4}$
 $y = -\frac{3}{4}x + c$
 $-6 = -\frac{3}{4}(0) + c$
 $c = -6$
 $\therefore y = -\frac{3}{4}x - 6$

2a. $mx = ny + 5$
 $ny = mx - 5$
 $y = \frac{m}{n}x - \frac{5}{n}$
 $\frac{m}{n} = 0$
 $\therefore m = 0$ #

For it to be // to y-axis,
 n must be zero.
 $\Rightarrow n = 0$ #

2b. $\frac{-2+3}{3-2} = \frac{k+2}{k-3}$
 $\frac{1}{1} = \frac{k+2}{k-3}$
 $k+2 = 5$
 $k = 3$ #

3a. $px^3 + 8 = y$
 $y = px^3 + 8 \quad (2, 48)$
 $48 = 8p + 8$
 $8p = 40$
 $p = 5$ #
 $\therefore y = 5x^3 + 8$
 When $x = 0$
 $y = 8$
 $\therefore A = (0, 8)$ #

4a. $\frac{-1+5}{3-1} = \frac{k+1}{k-3}$
 $\frac{4}{2} = \frac{k+1}{k-3}$
 $2k+2 = 16$
 $2k = 14$
 $k = 7$ #



Recycle

U-GRADE

$$4b) \frac{x}{3} + \frac{y}{2} = 1$$

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

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

$$\text{Gradient} = -\frac{2}{3}$$

$$\text{When } y = 0$$

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

$$x = 2 \times \frac{3}{2}$$

$$\therefore A = (3, 0) \#$$

$$\text{When } x = 0$$

$$y = 2$$

$$\therefore B = (0, 2) \#$$

$$4ci) y = \frac{1}{2}x + k \quad A(-1, -3)$$

$$-3 = \frac{1}{2}(-1) + k$$

$$k = -3 + \frac{1}{2}$$

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

$$= -\frac{5}{2} \#$$

$$4cii) y = \frac{1}{2}x + k$$

$$y = \frac{1}{2}x - \frac{5}{2}$$

$$m: y = \frac{1}{2}x + c$$

$$B(\frac{1}{2}, 0)$$

$$0 = \frac{1}{2}(\frac{1}{2}) + c$$

$$c = -\frac{1}{4}$$

$$\therefore m \quad y = \frac{1}{2}x - \frac{1}{4} \#$$