Coordinate Geometry

Term 1 Week 4

Date: No.

1a. $\frac{-1+3}{3-2} = \frac{k+1}{4-3}$

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

$2 = k+1$

$k = 1$ #

1b. $m = -1$ #

$y = -x + c$ (2, 3)

$3 = -2 + c$

$c = 5$ #

$\therefore y = -x + 5$

2a. $y = \frac{1}{x} - 2$ when $y = -1$

$y = -1 - 2$

$= -3$

$b = -3$ #

2b. $B = (-1, -3)$

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

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

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

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

$y = \frac{1}{2}x + c$ $A(a, 0)$

when $y = 0$

$0 = \frac{1}{x} - 2$

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

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

$\therefore A = (\frac{1}{2}, 0)$

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

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

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

$4y = 2x - 1$ #

3a. $2y + \frac{1}{2}x = 6$

$2y = -\frac{1}{2}x + 6$

$y = -\frac{1}{4}x + 3$

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

3b. When $x = 0$

$y = 3$

Pt of intersection $= (0, 3)$ #

4i. $\frac{1}{2}x - 2y = 2$

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

$y = \frac{1}{4}x - 1$

Gradient $= \frac{1}{4}$ #

4ii. $P(p, 0)$ $Q(0, 2)$

When $y = 0$

$0 = \frac{1}{4}x - 1$

$\frac{1}{4}x = 1$

$x = 4$

$P(4, 0)$

When $x = 0$

$y = -1$

$Q = (0, -1)$

$M = (\frac{0+4}{2}, \frac{0-1}{2})$

$= (2, -\frac{1}{2})$ #