

Worksheet 2015-9EH-00002(1)

(1) Draw the following on the same Cartesian plane. Use the method stated in brackets:

(a) $y = 2 - x$ (table method)

x	-2	-1	0	1	2
y	4	3	2	1	0

E.g. $y = 2 - (-2) = 2 + 2 = 4$

(b) $4x + 2 = 2y$ (double-intercept method)

$x\text{-int: } (y=0)$	$y\text{-int: } (x=0)$
$4x + 2 = 2(0)$	$4(0) + 2 = 2y$
$4x = -2$	$2 = 2y$
$x = \frac{-2}{4} = -\frac{1}{2}$	$1 = y$
$\therefore (-\frac{1}{2}; 0)$	$\therefore (0; 1)$

(c) $3y + 4 = 2x - 2$ (gradient-intercept method)

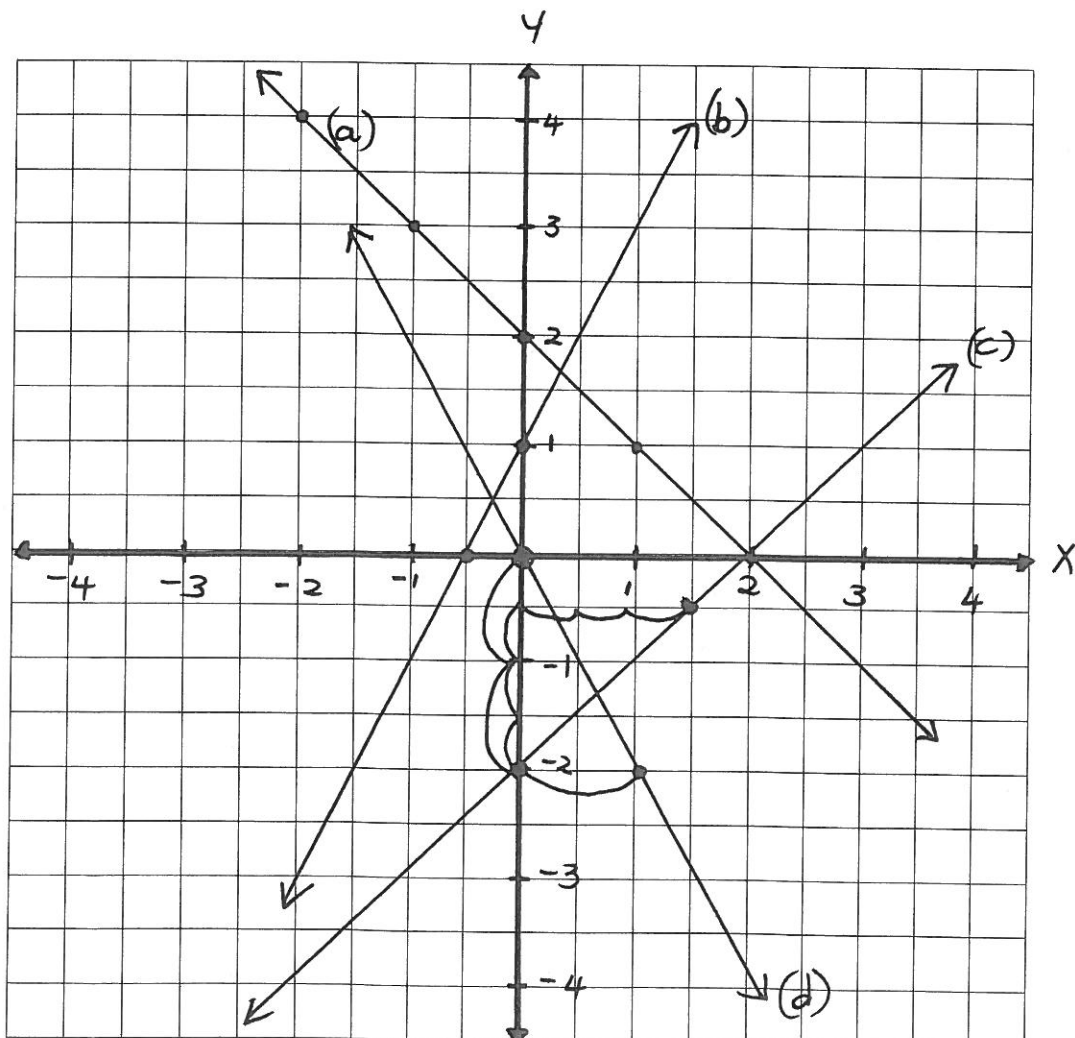
$$\begin{aligned} 3y &= 2x - 2 - 4 \\ 3y &= 2x - 6 \\ \frac{3y}{3} &= \frac{2x}{3} - \frac{6}{3} \\ y &= \frac{2}{3}x - 2 \end{aligned}$$

$\therefore m = \frac{2}{3} \uparrow \quad c = -2$

(d) $y + 1 + 2x = 1$ (any method)

$$\begin{aligned} y &= -2x + 1 - 1 \\ y &= -2x + 0 \end{aligned}$$

$\therefore m = -2 \downarrow \quad c = 0$



(2) Draw the following sets of lines on the same set of axes and find the simultaneous solution:
You can use any method.

(a) $y = 1 - 2x$ and $x + 3 = 2$

(i) $y = -2x + 1$ (ii) $x = 2 - 3$

x-int: ($y=0$) $x = -1$
 $0 = -2x + 1$
 $2x = 1$
 $x = \frac{1}{2} \therefore (\frac{1}{2}; 0)$

y-int: ($x=0$)
 $y = -2(0) + 1$
 $y = 0 + 1$
 $y = 1 \therefore (0; 1)$
 $\therefore P(-1; 3)$

(b) $3(y - 1) = y + 1$ and $y + x = 0$

(i) $3y - 3 = y + 1$ (ii) $y = -x$

$3y - y = 1 + 3$ $y = -1x$
 $2y = 4$ $\therefore m = \frac{-1}{+1} \rightarrow$
 $y = \frac{4}{2}$ $c = 0$

$y = 2$

$\therefore Q(-2; 2)$

