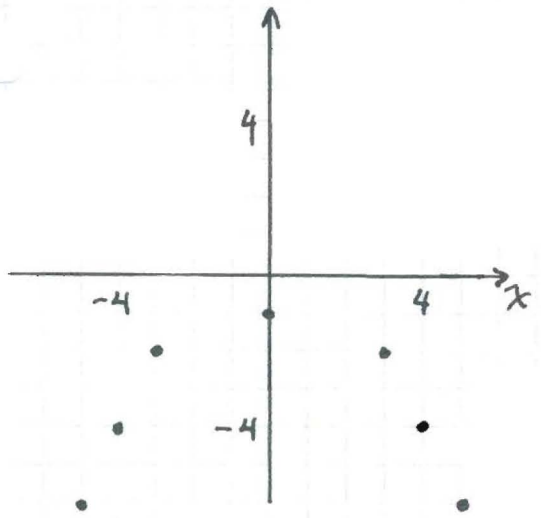
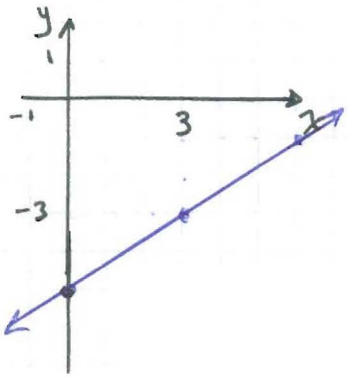
1. THE GRAPH OF THE RELATION IS SHOWN BELOW.

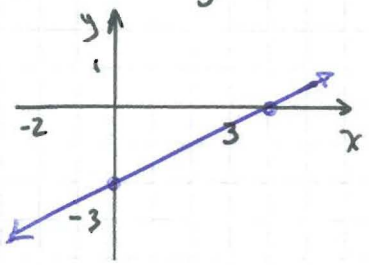


SINCE EACH INPUT (x) VALUE HAS NO MORE THAN ONE OUTPUT (y) VALUE, THIS RELATION IS A FUNCTION.

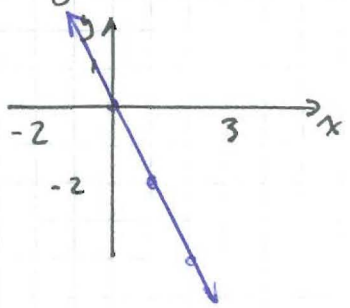
2. (a) $y = \frac{2}{3}x - 5$



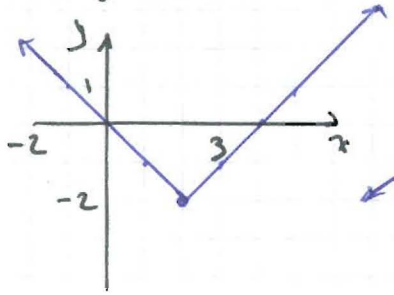
(b) $2x - 4y = 8$



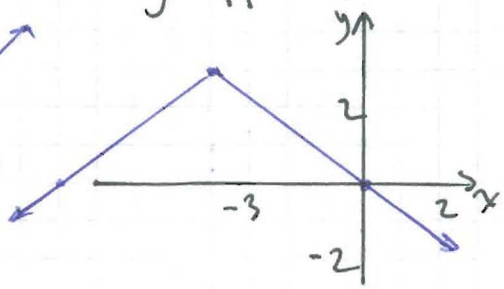
(c) $y + 2 = -2(x - 1)$



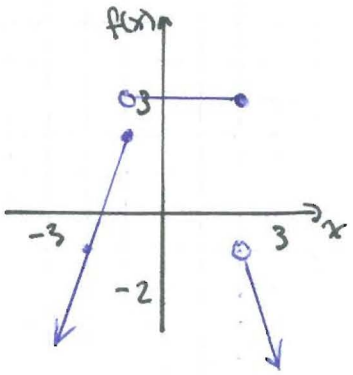
(d) $y = |x - 2| - 2$



(e) $y = \frac{-3}{4}|x + 4| + 3$



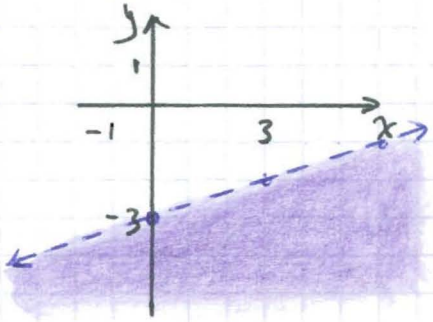
(f) $f(x) = \begin{cases} 3x + 5, & x \leq -1 \\ 3, & -1 < x \leq 2 \\ -3x + 5, & x > 2 \end{cases}$



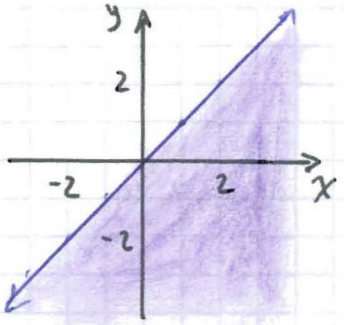
3. (a) $\frac{1}{3}x - y > 3$

$-y > -\frac{1}{3}x + 3$

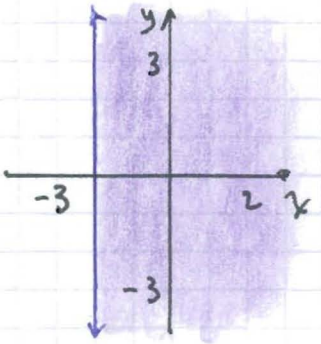
$y < \frac{1}{3}x - 3$



(b) $y \leq x$



(c) $x \geq -2$



4. (a) $-3|x+4|+2 = -2$

$-3|x+4| = -4$

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

If $(x+4) \geq 0$

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

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

If $(x+4) < 0$

$-(x+4) = \frac{4}{3}$

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

$x = -\frac{16}{3}$

(b) $4 - 2x > 2$

$-2x > -2$

$x < 1.$