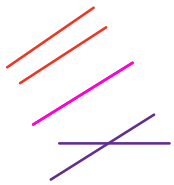
3a) How many sol^n & justify.

$x + 3y = 6$ $\quad y = -\frac{x}{3} + 6$

$\Rightarrow$ parallel = no sol^n
$\Rightarrow$ Coincident = ∞
$\Rightarrow$ other = 1.



Change to $y = mx + b$

$3y = -x + 6$

$y = -\frac{x}{3} + \frac{6}{3}$

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

$m = -\frac{1}{3}$ for both

$b = 2$ or 6

No sol^n.
The lines are parallel.

3c) $x - 4y = 8$ $\quad x + 4y = 20$

$-4y = -x + 8$ $\quad 4y = -x + 20$

$y = \frac{-x}{-4} + \frac{8}{-4}$ $\quad y = -\frac{x}{4} + \frac{20}{4}$

$y = \frac{x}{4} - 2$ $\quad y = -\frac{x}{4} + 5$

slopes are different.
$\therefore$ 1 sol^n.

5 a) Same slope.
Different y-int.
∴ parallel
∴ zero sol^n.

b) eq^n 1 is twice eq^n 2. ∴ the lines are coincident.
∴ ∞ sol^n.