

(a) $y = \sqrt{5-x}$ (b) $y = \frac{2x-1}{x^2-x} = \frac{2x-1}{x(x-1)}$ (c) $y = 1 - \sqrt{x+2}$

Df: $(-\infty, 5]$
Rf: $[0, \infty)$

Df: $[-2, \infty)$
Rf: $(-\infty, 1]$

$x \neq 0$ Df: $(-\infty, \infty)$
 $x \neq 1$ but $x \neq 0, x \neq 1$

x_1, y_1, x_2, y_2
 $(2, 3) (5, 8)$

point-point formula.

$y-3 = \frac{8-3}{5-2}(x-2)$

$y = \frac{5}{3}x - \frac{10}{3} + 3 = \frac{5}{3}x + \frac{20}{3}$

3.

P_1, D_1
 $(10, 200) \quad D - P_1 = \frac{P_2 - P_1}{P_2 - P_1} (P - P_1)$

P_2, D_2
 $(15, 150) \quad D - 200 = \frac{150 - 200}{15 - 10} (P - 10)$

$D = -\frac{50}{5}(P - 10) + 200 = -10P + 100 + 200$
 $= 300 - 10P \quad //$

4. $(1, 3)$ slope = 2

$y - 3 = 2(x - 1)$

$y = 2x - 2 + 3 = 2x + 1$

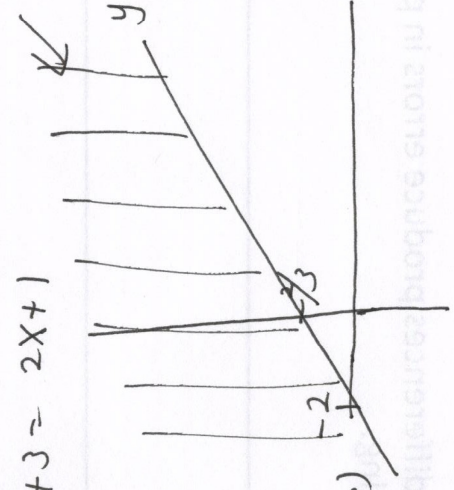
$y \geq \frac{x}{3} + \frac{2}{3}$

5. $x - 3y + 2 \leq 0$

$-3y \leq -x - 2$

$3y \geq x + 2$

$y \geq \frac{x}{3} + \frac{2}{3}$



x-intercept $(y=0)$

$\frac{x}{3} + \frac{2}{3} = 0$

$x = -2$

y-intercept $(x=0)$

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

6. $D = 75 - 3P, S = 20 + 2P$

At the eq. $D = S$

$75 - 3P = 20 + 2P$

$5P = 55$

$P = 11$ //

7. (a) $x^2 + 4x$

$a = 1$

$b = 4$

$c = 0$

since $a > 0$, it has

minimum at

$x = -\frac{b}{2a} = -\frac{4}{2} = -2.$

7. (b) $-3x^2 + 30x - 30$

$a = -3$

$b = 30$

$c = -30$

since $a < 0$, it has

maximum at

$x = -\frac{b}{2a} = +\frac{30}{-6} = -5$

$y = (-2)^2 + 4(-2) = 4 - 8 = -4$

$(-2, -4)$