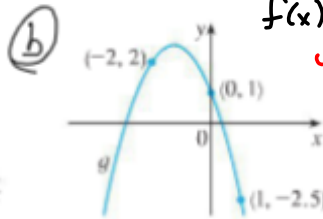
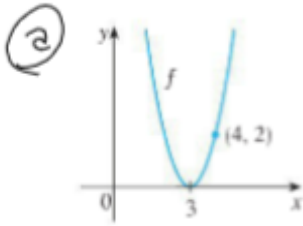


Ch 10 #10

10. Find expressions for the quadratic functions whose graphs are shown.



Let $f(x) = ax^2 + bx + c$.
we find a, b, c .

$f(-2) = 2 \rightarrow a(-2)^2 + b(-2) + c = 2$
 $\Rightarrow 4a - 2b + c = 2$ (1)

$f(0) = 1 \rightarrow a(0)^2 + b(0) + c = 1$
 $\Rightarrow c = 1$ (2)

$f(1) = -2.5 = -\frac{5}{2} \rightarrow a(1)^2 + b(1) + c = -\frac{5}{2}$
 $a + b + c = -\frac{5}{2}$ (3)

(2) $c = 1 \Rightarrow$

(1) $4a - 2b + 1 = 2$
 $\Rightarrow 4a - 2b = 1$

(2) $c = 1$

(3) $a + b + 1 = -\frac{5}{2}$
 $a + b = -\frac{7}{2}$

$4a - 2b = 1$

$a + b = -\frac{7}{2}$

$\Rightarrow a = -b - \frac{7}{2}$

$4(-b - \frac{7}{2}) - 2b = 1$
 $-4b - 14 - 2b = 1$

$-6b = 15$

$b = \frac{15}{-6} = -\frac{5}{2} = b$

$a = -b - \frac{7}{2} = -(-\frac{5}{2}) - \frac{7}{2}$

$a = \frac{5-7}{2} = -1 = a$
 $\therefore f(x) = -x^2 - \frac{5}{2}x + 1$

$a + b = -\frac{7}{2}$
 $4a - 2b = 1 \Rightarrow \begin{bmatrix} 1 & 1 & | & -\frac{7}{2} \\ 4 & -2 & | & 1 \end{bmatrix}$

$\sim \begin{bmatrix} 1 & 1 & | & -\frac{7}{2} \\ 0 & -6 & | & 15 \end{bmatrix} \sim \begin{bmatrix} 1 & 1 & | & -\frac{7}{2} \\ 0 & 1 & | & -\frac{5}{2} \end{bmatrix}$ Gaussian Elimination.

$\begin{bmatrix} 1 & 0 & | & -1 \\ 0 & 1 & | & -\frac{5}{2} \end{bmatrix} a = -1, b = -\frac{5}{2}$

Sl.2
#58 Area is 64 m^2



$$Lw = 64 \rightarrow w = \frac{64}{L}$$

want Perimeter

$$2L + 2w = 2L + 2\left(\frac{64}{L}\right)$$

$$P = 2L + \frac{128}{L}$$

$$L = .001$$

$$w = \frac{64}{.001} = \frac{64}{\frac{1}{1000}} = (64)\left(\frac{1000}{1}\right) = 64000$$

AAA! Assume $L > w$.

