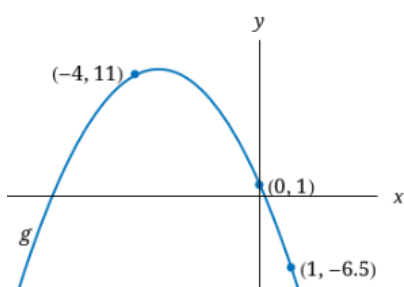


1.2 #6

Find expressions for the quadratic functions whose graphs are shown.



$$ax^2 + bx + c = y$$

$$a(-4)^2 + b(-4) + c = 11$$

$$a(0)^2 + b(0) + c = 1 = c$$

$$a(1)^2 + b(1) + c = -6.5$$

$$16a - 4b + 1 = 11$$

$$a + b + 1 = -6.5$$

$$16a - 4b = 10$$

$$a + b = -7.5$$

$$a = -b - 7.5$$

$$\Rightarrow 16a - 4b = 16(-b - 7.5) - 4b$$

$$= -16b - 120 - 4b$$

$$= -20b - 120 = 10$$

$$\Rightarrow -20b = 130$$

$$b = \frac{130}{-20} = -\frac{13}{2} = -6.5$$

Now, we have

$$y = ax^2 - 6.5x + 1$$

$$a = -b - 7.5$$

$$= -(-6.5) - 7.5 = 6.5 - 7.5 = -1$$

$$-x^2 - 6.5x + 1$$

$$\Rightarrow y = -x^2 - 6.5x + 1$$

$$\begin{array}{r} 16 \\ \times 7.5 \\ \hline 120 \\ 1120 \\ \hline 1200 \end{array}$$

NOT (A OR B) means NOT A AND NOT B

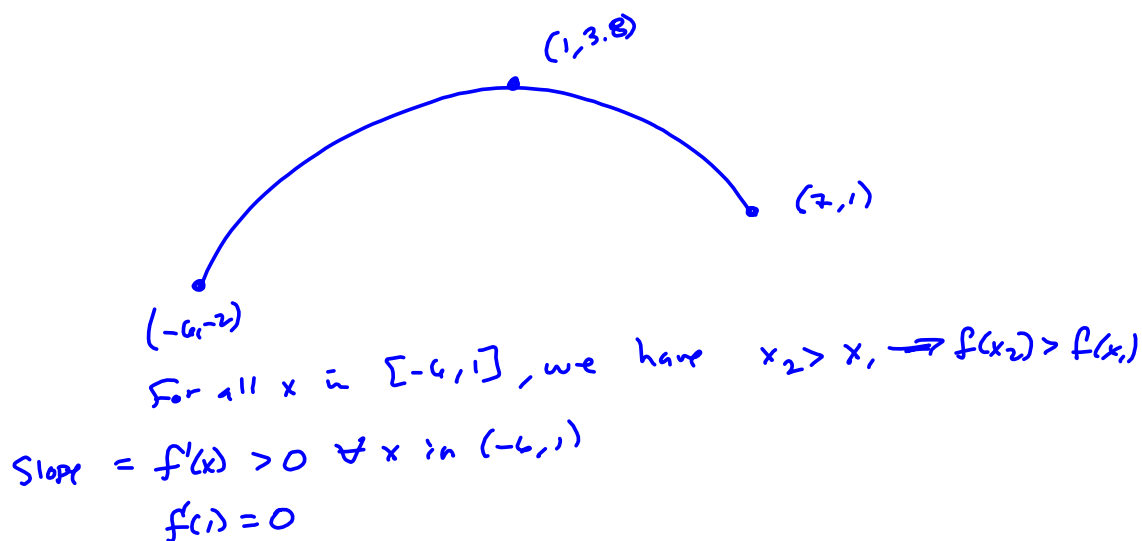
webAssign will say $x \neq 7$

That's not a set. That's a condition.

The set is $\{x \mid x \neq 7\} = \mathbb{R} \setminus \{7\}$

It's a pain, because the webAssign's imprecise,
sometimes -

f is increasing on $[a,b]$ if for all x_1, x_2 in $[a,b]$ with $x_1 < x_2$, we have $f(x_1) < f(x_2)$



By the book definition, there will be an overlap of 1 point between intervals of increase and decrease at local max or local min points.

