

P 169 # 7 → 12

13 → 18
matching

33 → 38
change question.

Homework Section

Section 2.1

7 → 12

#7

Find the equation of a linear function

$$f(-5) = -1$$

$$\begin{pmatrix} x_1 \\ -5 \end{pmatrix}, \begin{pmatrix} y_1 \\ -1 \end{pmatrix}$$

$$f(2) = 4$$

$$\begin{pmatrix} x_2 \\ 2 \end{pmatrix}, \begin{pmatrix} y_2 \\ 4 \end{pmatrix}$$

$$y = mx + b$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y = \frac{5}{7}x + b$$

$$m = \frac{4 - (-1)}{2 - (-5)} = \frac{5}{7}$$

Use $(-5, -1)$ or $(2, 4)$
and plug in x and y to find b .

$$y = \frac{5}{7}x + b$$

$$4 = \frac{5}{7}(2) + b$$

$$b = \frac{4}{1} - \frac{10}{7}$$

common denominator → $b = \frac{28}{7} - \frac{10}{7}$

$$b = \frac{18}{7}$$

$$y = \frac{5}{7}x + \frac{18}{7}$$

33-38

Change to vertex form

Describe the graph of the function + sketch

- vertex
- axis of symmetry.
- opens upward / downward.
- X-intercepts ↗ Factoring
↘ Quadratic formula

$$f(x) = x^2 - 4x + \textcircled{6}$$

y-int

$a=1$ $b=-4$ $c=6$

• vertex form $\rightarrow$ vertex (h, k) $h = -\frac{b}{2a}$

$$h = \frac{4}{2} = 2, \quad 2^2 - 4(2) + 6 = 4 - 8 + 6 = 2$$

vertex $(2, 2)$

a is the same as standard form.

$$f(x) = 1(x-2)^2 + 2 \quad \text{vertex form.}$$

$$f(x) = a(x-h)^2 + k$$

- axis of symmetry $x=2$ ($x=h$)
- $a > 0$ parabola opens upward.
- 2 to the right, up 2.
- X-intercepts $x^2 - 4x + 6$ $a=1$ $b=-4$ $c=6$

$$\begin{array}{c} 6 \\ \times \\ -4 \end{array}$$

X-method does not work

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{4 \pm \sqrt{16 - 4(1)(6)}}{2(1)}$$

$$= \frac{4 \pm \sqrt{-8}}{2}$$

No real solution

