



9ft



$$\frac{9}{3} = \frac{3}{x}$$

$$9x = 9$$

$$x = 1$$

$$\frac{9}{3} = \frac{3}{x}$$

$$27 = \frac{3x}{3}$$

$$x = 9$$

x-intercepts $\left\{ -1, -\frac{3}{10} \right\}$

$$10x^2 + 13x = -3$$

Decomposition

$$10x^2 + 13x + 3 = 0$$

$$\times \begin{pmatrix} +30 \end{pmatrix}$$

$$10x^2 + 10x + 3x + 3 = 0 + 13$$

$$3, 10$$

$$10x(x+1) + 3(x+1) = 0$$

$$(x+1)(10x+3) = 0$$

either $x+1=0$ or $10x+3=0$
 $x=-1$ or $\frac{10x}{10} = \frac{-3}{10}$

$$\underline{\underline{10x^2 + 13x + 3 = 0}}$$

$$y = 10x^2 + 13x + 3 \quad \begin{array}{l} \text{y intercept} \\ x = 0 \end{array}$$

$$y = \cancel{10(0)^2} + \cancel{13(0)} + 3$$

$$y = \text{intercept}$$

x -intercepts $\leftarrow$ zeroes $\leftarrow \{ -\frac{1}{5}, \frac{5}{4} \}$

$$8x^2 = 6x + 5$$

$$8x^2 - 6x - 5 = 0 \quad \times 40$$

$$8x^2 + 4x - 10x - 5 = 0 \quad + - 6$$

$$4x \quad -5 \quad 4-10$$

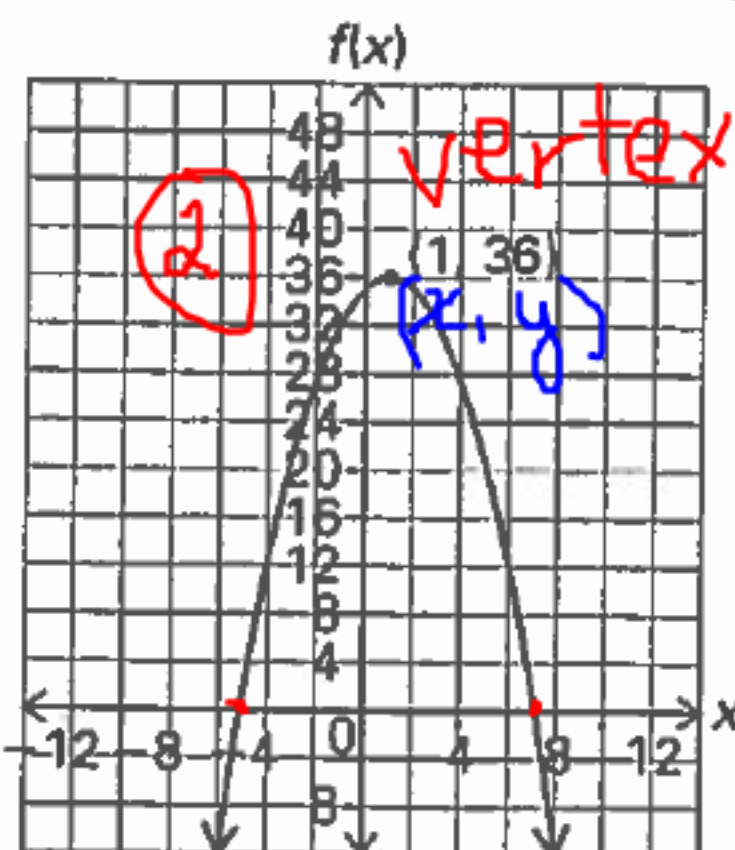
$$4x(2x+1) - 5(2x+1) = 0$$

either $2x+1=0$ or $4x-5=0$

$$\cancel{2x} = -\frac{1}{2} \quad \cancel{4x} = \frac{5}{4}$$



b)



Zeros:

x = -5 and x = 7

3

Factored form:

$$f(x) = a(x - \underline{-5})(x - \underline{7})$$

$$y = a(x + 5)(x - 7)$$

Solve for a:

$$36 = a(1 + 5)(1 - 7)$$

$$36 = a(6)(-6)$$

$$36 = a(-36)$$

$$\underline{-36} = \underline{-36}$$

$$f(x) =$$

$$y = -(x + 5)(x - 7)$$

4

Standard form:

$$f(x) = -1(x + 5)(x - 7)$$

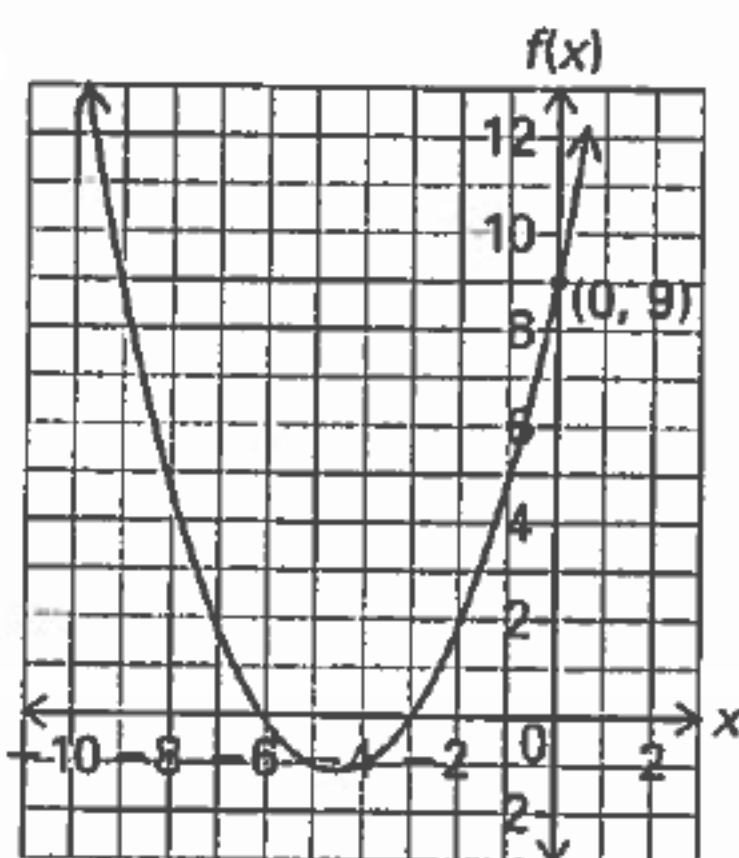
$$y = -1(x^2 - 7x + 5x - 35)$$

$$y = -1(x^2 - 2x - 35)$$

$$y = -x^2 + 2x + 35$$

5 max.

c)



Zeros:

Factored form:

$$f(x) = a(x - \underline{\quad})(x - \underline{\quad})$$

$$\underline{\quad} = \underline{\quad}$$

Solve for a:

$$\underline{\quad} = a(\underline{\quad})(\underline{\quad})$$

$$\underline{\quad} = \underline{\quad}$$

$$\underline{\quad} = \underline{\quad}$$

Standard form:

$$f(x) = \underline{\quad}$$

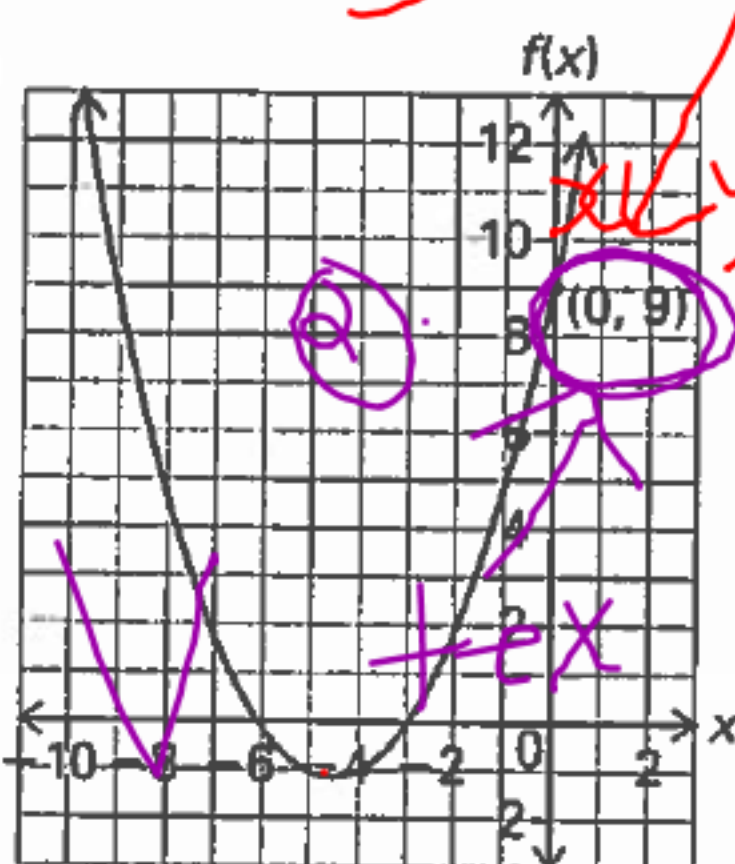
$$\underline{\quad} = \underline{\quad}$$

$$\underline{\quad} = \underline{\quad}$$

$$\underline{\quad} = \underline{\quad}$$



c)



Zeros:

$$x = -6 \text{ and } x = -3$$

Factored form:

$$f(x) = a(x + 6)(x + 3)$$

$$y = 6(x + 6)(x + 3)$$

Solve for a:

$$y = a(0 + 6)(0 + 3)$$

$$9 = a(6)(3)$$

$$9 = 18a$$

$$a = \frac{1}{2}$$

$$f(x) = \frac{1}{2}(x + 6)(x + 3)$$

Standard form:

$$f(x) = \frac{1}{2}(x + 6)(x + 3)$$

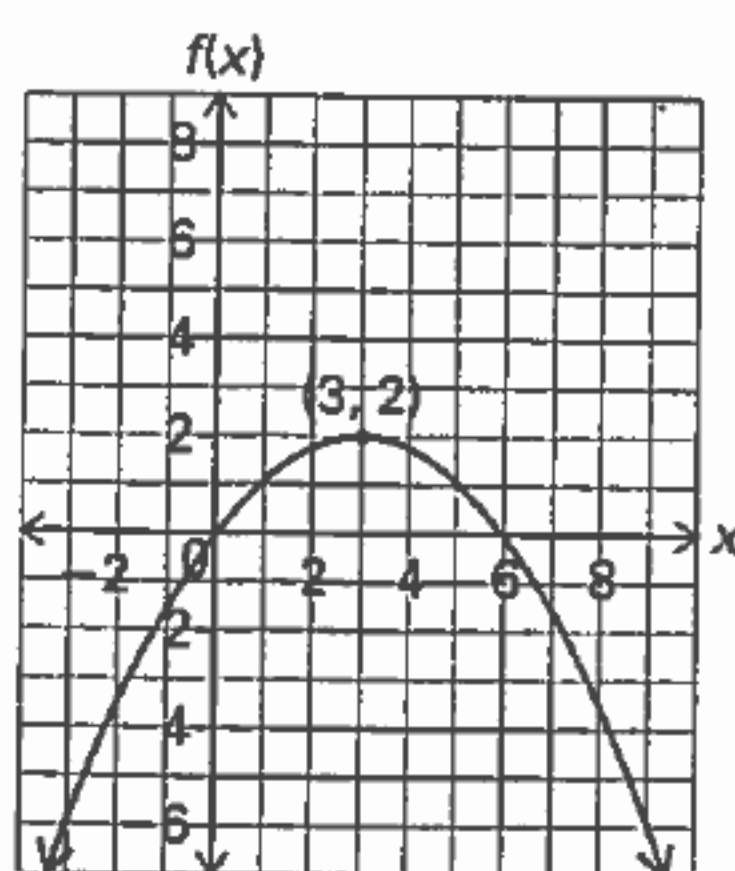
$$y = \frac{1}{2}(x^2 + 6x + 3x + 18)$$

$$y = \frac{1}{2}(x^2 + 9x + 18)$$

$$y = \frac{1}{2}x^2 + \frac{9}{2}x + 9$$

$$y = -2x^2 + 18x + 36$$

d)



Zeros:

Factored form:

$$f(x) = a(x - \underline{\hspace{1cm}})(x - \underline{\hspace{1cm}})$$

$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

Solve for a:

$$\underline{\hspace{1cm}} = a(\underline{\hspace{1cm}})(\underline{\hspace{1cm}})$$

$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

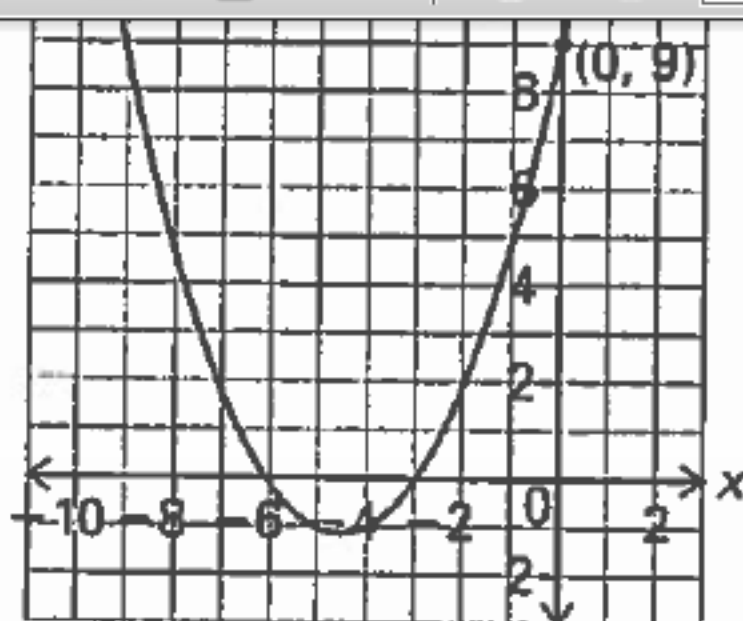
$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

Standard form:

$$f(x) = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$



Zeros:

$x = \underline{\quad}$ and $x = \underline{\quad}$

$\underline{\quad} = \underline{\quad}$

Solve for a :

$\underline{\quad} = a(\underline{\quad})(\underline{\quad})$

$\underline{\quad} = \underline{\quad}$

$\underline{\quad} = \underline{\quad}$

$\underline{\quad} = \underline{\quad}$

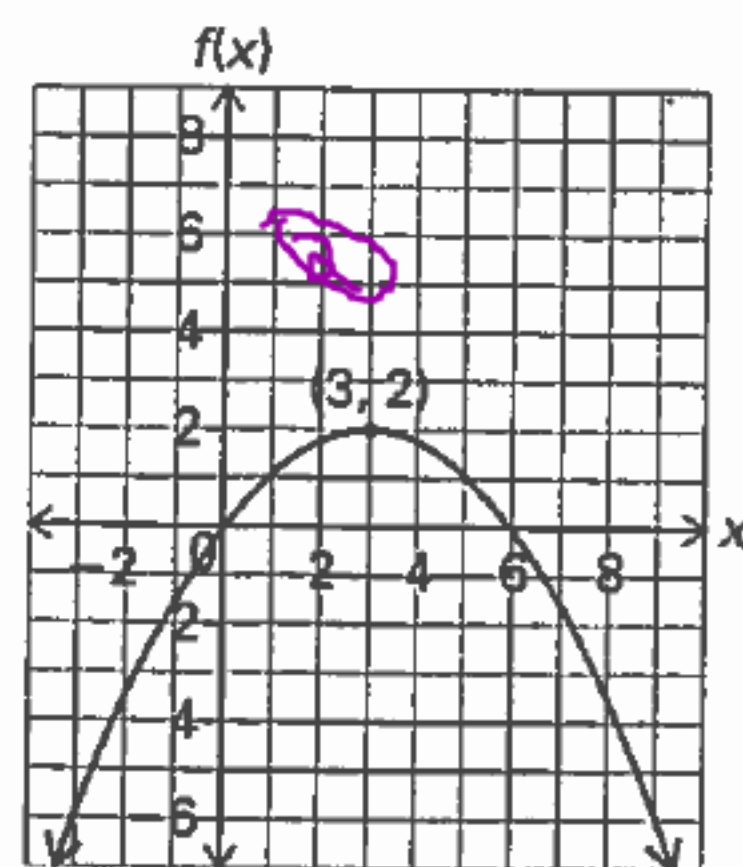
$f(x) = \underline{\quad}$

$\underline{\quad} = \underline{\quad}$

$\underline{\quad} = \underline{\quad}$

$\underline{\quad} = \underline{\quad}$

d)



Zeros:

$x = \underline{0}$ and $x = \underline{6}$

Factored form:

$f(x) = a(x - \underline{0})(x - \underline{6})$

$y = a(x)(x - 6)$

Solve for a :

$2 = a(3)(3 - 6)$

$2 = a(3)(-3)$

$2 = -9a$

$-\frac{2}{9} = -a$

$f(x) = -\frac{2}{9}(x)(x - 6)$

Standard form:

$f(x) = -\frac{2}{9}(x)(x - 6)$

$y = -\frac{2}{9}(x^2 - 6x)$

$y = -\frac{2}{9}x^2 + \frac{4}{3}x$

$x \neq 0$

$y = -\frac{2}{9}x^2 + \frac{4}{3}x$

$a = -\frac{2}{9}$