$3x^2 - 2x + 4 = 0$

$a \quad b \quad c$

$f(x) = 3x^2 - 2x + 4$

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

$x = \dfrac{2 \pm \sqrt{4 - 4(3)(4)}}{2(3)}$

$x = \dfrac{2 \pm \sqrt{4 - 48}}{6} = \dfrac{2 \pm \sqrt{+44}\,i}{6}$

$\dfrac{2 \pm 2\sqrt{11}\,i}{6}$

$\dfrac{1 \pm \sqrt{11}\,i}{3}$

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

Standard: $f(x) = ax^2 + bx + c$

Vertex: $\left(-\frac{b}{2a}, f\left(\frac{-b}{2a}\right)\right)$

Vertex is $(h, k)$

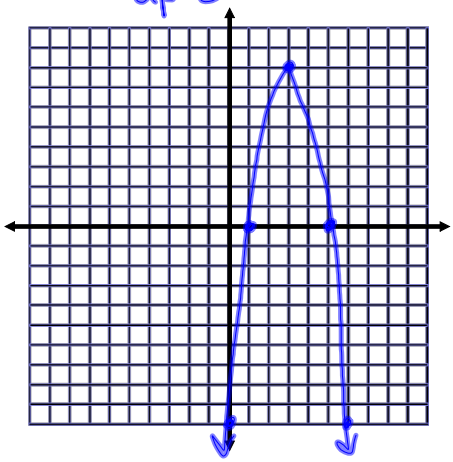
$f(x) = -2(x-3)^2 + 8$

Vertex: (3, 8)

x-int: (5, 0) (1, 0)

y-int: (0, -10)

PF: flip over x-axis
Vert. stretch
Right 3
Up 8



$f(x) = -x^2 + 4x - 1$

$-4 + 8 - 1$

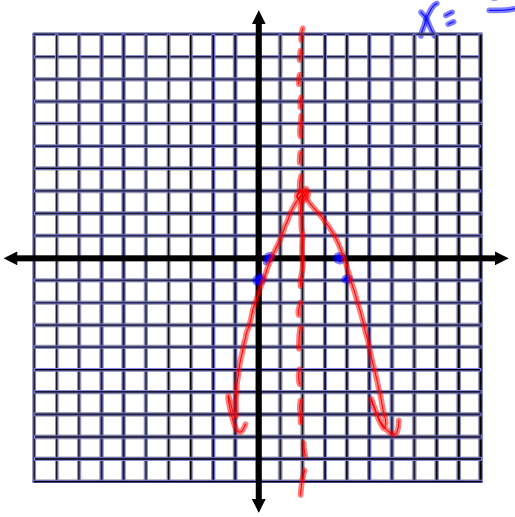
Vertex = (2, 3)

x-int = (3.7, 0) (.3, 0)

y-int = (0, -1)

$0 = -x^2 + 4x - 1$

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



$\frac{.3 + 3.7}{2}$

2

Find the numbers that sum 22 and have the largest product

$x$ = 1st

$y$ = 2nd

$x + y = 22$ $\quad y = 22 - x$

$P(x) = xy$

$P(x) = x(22 - x)$

(11, 11)


$0 = x(22 - x)$

$x = 0$ $\quad 22 - x = 0$

$x = 22$

HW pg. 265 2-8e

#12 (x-int, y-int, vertex, PF, graph)

#36 (x-int, y-int, vertex, graph)

#48, 50