

$$6\% = \frac{6}{100} = 0.06$$

$$10\% = .10$$

$$35\% = .35$$

$$\% \text{ increase or decrease} = \frac{\text{change}}{\text{original}}$$

$$\$15 \rightarrow \$18 = \frac{\$3}{\$15} = 0.2$$

20% increase

QE:

$$ax^2 + bx + c = 0$$

parabolas:

$$y - k = a(x - h)^2$$

$$f(x) = 3x^2 + 6x - 1$$

$$\frac{y = 3x^2 + 6x - 1}{3}$$

complete
the square

$$\frac{y}{3} = x^2 + 2x - \frac{1}{3}$$

$$\frac{y}{3} + \frac{1}{3} = x^2 + 2x$$

$$(a+b)(a+b)$$

$$a^2 + ab + ab + b^2 = a^2 + 2ab + b^2$$

$$a = x$$

$$\frac{2\cancel{a} = 2\cancel{a}b}{2}$$

$$1 = b$$

I will add 1 to
both sides

$$\frac{y}{3} + \frac{1}{3} + 1 = x^2 + 2x + 1$$

$$1 = \frac{3}{3} + \frac{1}{3} = \frac{4}{3}$$

$$3\left(\frac{y}{3} + \frac{4}{3}\right) = \left((x+1)^2\right)3$$

$$y + 4 = 3(x+1)^2$$

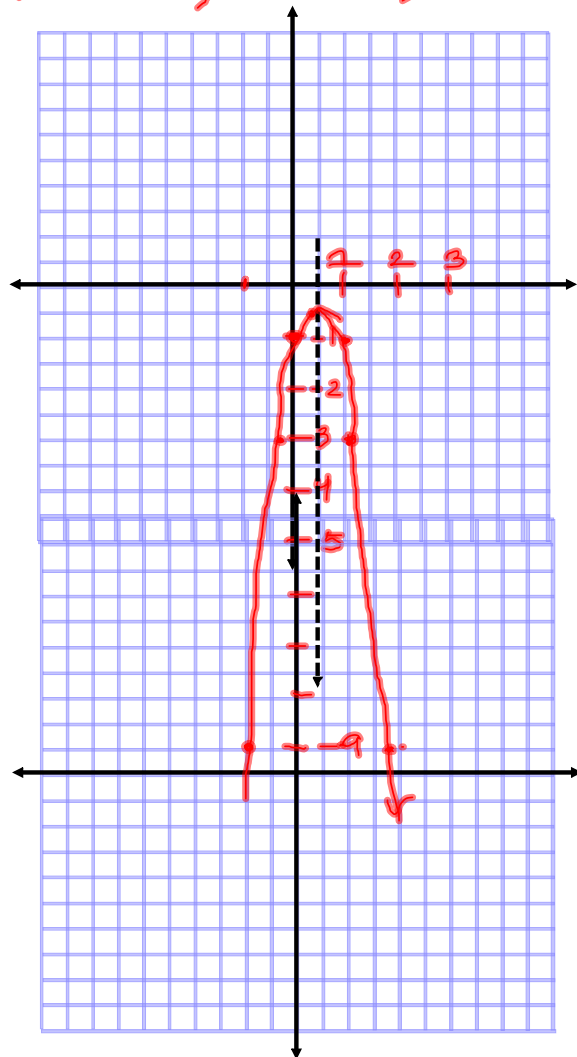
The issue w/ graphing things in QE form, is that we don't know the vertex. But calculators can do that for us.

$$f(x) = -5x^2 + 3x - 1$$

→ graph in calculator
→ calculate vertex

$$V: (0.2999977, -.55)$$

$$V: (0.3, -.55)$$



$$f(x) = x^2 - 3x + 7$$

$$V: (1.5, 4.75)$$

