Wednesday, January 16, 2019

- Warm-up
  - Write the following in standard form: $f(x) = (x-1)^2 - 16$

Standard form: $ax^2 + bx + c = 0$

$(x-1)(x-1) - 16$

$x^2 - 1x - 1x + 1 - 16$

$x^2 - 2x - 15 = 0$

- More with quadratics

Objectives

Content: I will solve and graph quadratics.

Social: I will work with my group and help them understand the content.

Language: I will write clear notes so that I can use them on the quiz.

What else can we do with this equation?

$$f(x) = (x - 1)^2 - 16$$

vertex form

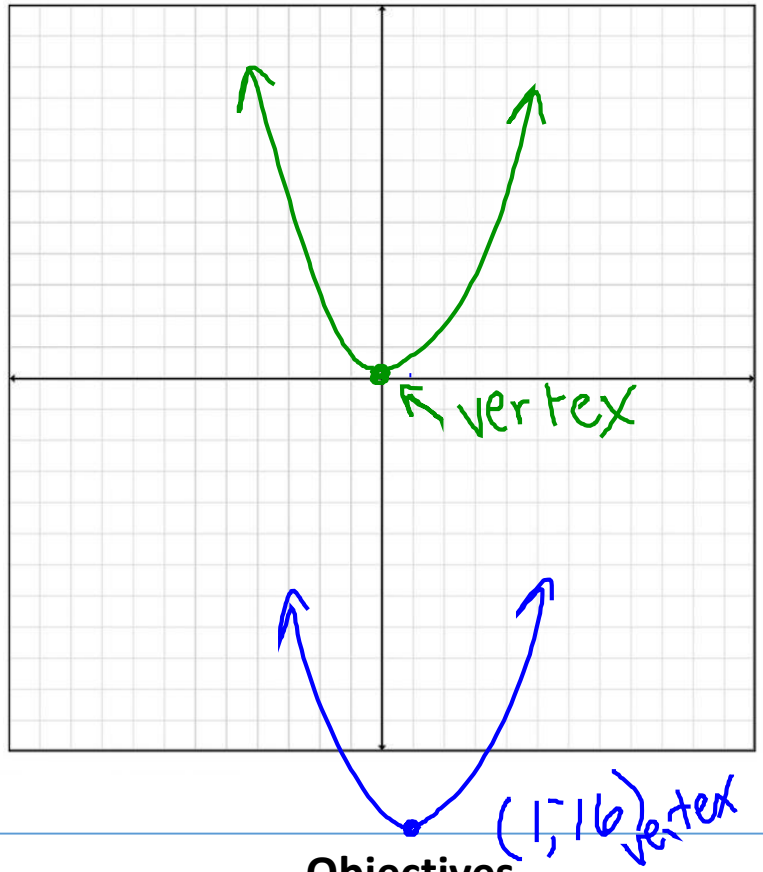
$f(x) = x^2$

opens up

new vertex = $(1, -16)$

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

vertex: (h, k)



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Can I solve it?

$$f(x) = (x-1)^2 - 16$$

y-intercept (where the parabola crosses the y-axis)

* in standard form * ALWAYS c-value

(0, -15)

$f(x) = x^2 - 2x - 15$

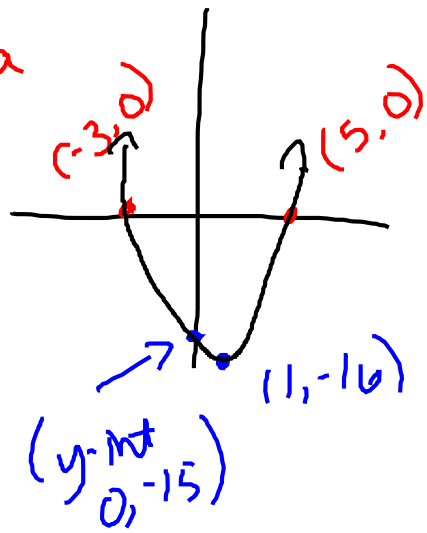
$f(0) = 0^2 - 2(0) - 15$

y-int

$= -15$

X-intercepts where the parabola crosses the x-axis

(5, 0) (-3, 0)



Solve for x

$0 = x^2 - 2x - 15$ → 5, 3 / 1, 15

$0 = (x-5)(x+3)$

$x - 5 = 0$

$+5 \quad +5$

$x = 5$

$x + 3 = 0$

$-3 \quad -3$

$x = -3$

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$f(x) = (x-1)^2 - 16$

$0 = x^2 - 2x - 15$

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

$a = 1$

$b = -2$

$c = -15$

$x = \frac{-(-2) \pm \sqrt{(-2)^2 - 4 \cdot 1 \cdot -15}}{2(1)}$

$= \frac{2 \pm \sqrt{4 + 60}}{2}$

$= \frac{2 \pm \sqrt{64}}{2}$

$\frac{2+8}{2} = \frac{10}{2} = 5$

$\frac{2-8}{2} = \frac{-6}{2} = -3$

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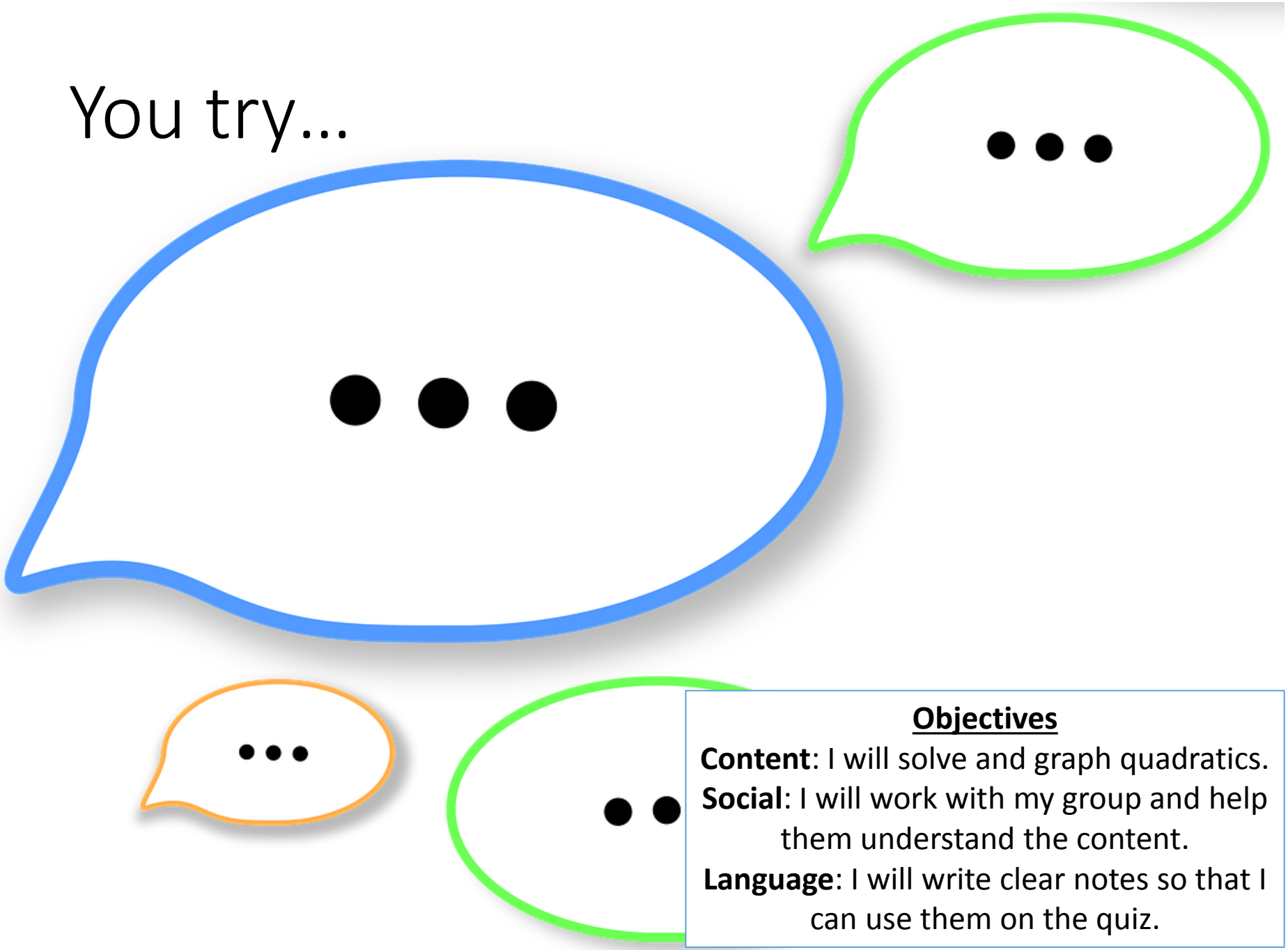
You try…



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Match & Check

Questions…

Homework Time