7.4 Notes

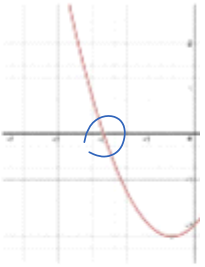
Tuesday, May 12, 20 9:15 AM

Section 7.4 – Factored Form of a Quadratic

- Factored Form
  - $y = a(x - r)(x - s)$
    - x = r and x = s are the zeros.
    - Linear equation for the axis of symmetry: $x = \frac{r+s}{2}$
    - Y-intercept, c, is $c = a \cdot r \cdot s$
      - Remember it because you can "see" it's "butt"
  - This is good because you can graph it because you can see the zerc
  - You can draw the parabola using the x-intercepts and another poir parabola.
  - If there are no zeros for the function, you can't write it in factored
  - If it only has one x-intercept, you can write the equation as $y = a($

Examples for 7.4

1. Write an equation in factored form for the graph. (Hint: a=1)



(1,0) & (-2,0) $y = a(x-r)(x-s)$

$y = 1(x+2)(x-1)$

2. Use the following equation for the next questions:

$$f(x) = x^2 - 4x - 5$$

a. Write it in factored form.

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

$ac = -5$

$b = -4$

$(-1)(5)$

$(-5)(1)$

(5, 0) (-1, 0)

b. Determine the x-intercepts. * change signs! Watch for negatives!

c. Determine the axis of symmetry. $x = \frac{r+s}{2} = \frac{5+(-1)}{2} = \frac{4}{2} = 2$ → $x = 2$

d. Determine the y-intercept

c = ars

$c = (1)(5)(-1)$