

Before we begin, are there any questions from last day's work?

5.6 pp. 281-284 #1, 2ad, 3abcd, 4, 5abcde, 13, 14ab

Today's Learning Goal(s):

By the end of the class, I will be:

- a) ready for the Unit 5 Summative

Warm-up on next screen

*Warm-up*Ex. Given the parabola $y = x^2 - 2x - 35$,

a) factor, then determine the zeroes

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

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

let $y = 0$

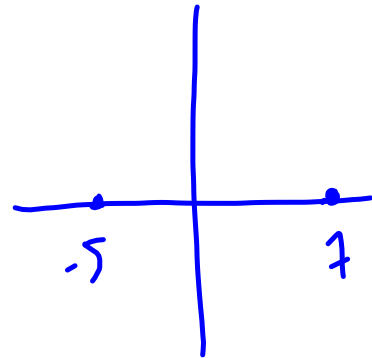
$$0 = (x - 7)(x + 5)$$

$$x - 7 = 0$$

$$x = 7$$

$$x + 5 = 0$$

$$x = -5$$



b) find the vertex

$$x = \frac{7 + (-5)}{2}$$

$$= \frac{2}{2}$$

$$x = 1$$

Sub $x = 1$

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

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

$$= (-6)(6)$$

$$= -36$$

$$\therefore (1, -36)$$

MBF 3CI

Unit 5 Review Ideas

Date: Nov. 22/16

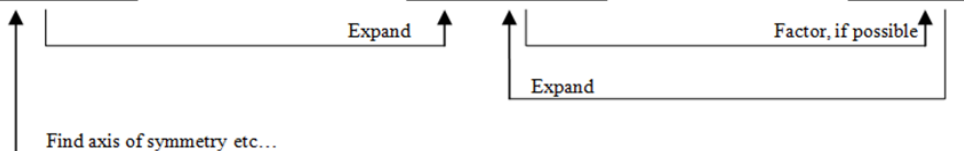
$$y = a(x-h)^2 + k$$

Vertex Form

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

Standard Form

$$y = a(x-r)(x-s)$$

Zeros Form

1. Expanding Binomials.

Ex.) $(2x-3)(5x+2)$

$$= 10x^2 + 4x - 15x - 6$$

$$= 10x^2 - 11x - 6$$

2. Changing from vertex form to standard form.

Hint: *Expand*

Ex.) $y = 2(x+4)^2 - 3$

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

$$= 2(x^2 + 4x + 4x + 16) - 3$$

$$= 2(x^2 + 8x + 16) - 3$$

$$= 2x^2 + 16x + 32 - 3$$

$$= 2x^2 + 16x + 29$$

3. Factoring: Trinomials

Ex.) $x^2 - 8x - 20$

$$= (x-10)(x+2)$$

4. Factoring: with a Common Factor

Ex. a) $3x^2 - 18x + 24$ b) $12x^2 - 7x$ c) $3x^2 - 15x$ d) $-4x^2 + 20x$

$$= 3(x^2 - 6x + 8) = x(12x - 7) = 3x(x - 5) = -4x(x - 5)$$
$$= 3(x - 2)(x - 4)$$

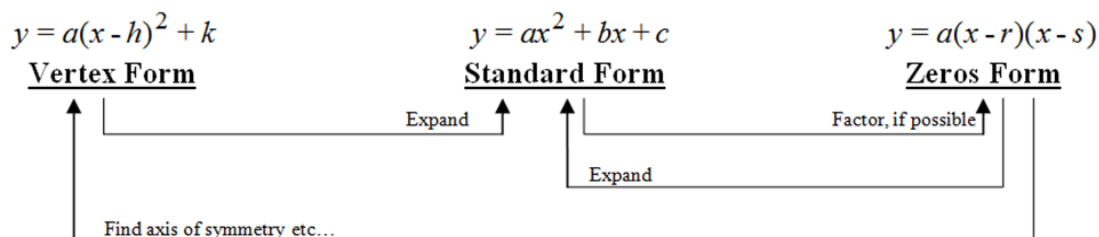
5. Factoring: Difference of Squares

Ex. a) $x^2 - 16$

$$= (x + 4)(x - 4)$$

b) $2x^2 - 50$

$$= 2(x^2 - 25)$$
$$= 2(x + 5)(x - 5)$$



6. Find the zeros (x-intercepts).

Hint: *Factor First*

$$\begin{aligned}
 y &= 3x^2 + 24x - 60 \\
 &= 3(x^2 + 8x - 20) \\
 &= 3(x-2)(x+10) \\
 \text{let } y &= 0 \\
 0 &= 3(x-2)(x+10) \\
 &\quad \downarrow \quad \downarrow \\
 &\quad x-2=0 \quad x+10=0 \\
 &\quad x=2 \quad \text{or } x=-10
 \end{aligned}$$

7. Find the maximum or minimum when given standard form

Hint: *Factor, find the zeros, then find the vertex using the axis of symmetry*

$$\begin{aligned}
 y &= x^2 - 8x + 12 \\
 &= (x-2)(x-6) \\
 \text{let } y &= 0 \\
 0 &= (x-2)(x-6) \\
 &\quad \downarrow \quad \searrow \\
 &\quad x=2 \quad \text{or } x=6
 \end{aligned}$$

AQS: $x = \frac{2+6}{2}$
 $= \frac{8}{2}$
 $= 4$
 $y = (x-2)(x-6)$
 $= (4-2)(4-6)$
 $= (2)(-2)$
 $= -4$

Entertainment: pp. 286-287 #1ac, 2, 3bc, 4bc, 6, 8, 10-13, 15
 pp. 288-289 #9, 10, 12

\therefore the minimum value is -4.