Chapter 10-1 to 10-5 Review

1. Simplify $(-2x^2 + 3x + 16) - (2x^3 + 6x^2 - 7x + 8)$

2. Find the product $(6x^3 + 4x) (-2x^2 - 5)$

Use the zero product property to solve

3. $(5x - 3) (2x + 6) = 0$

4. $(7x + 2) (5x - 15) = 0$

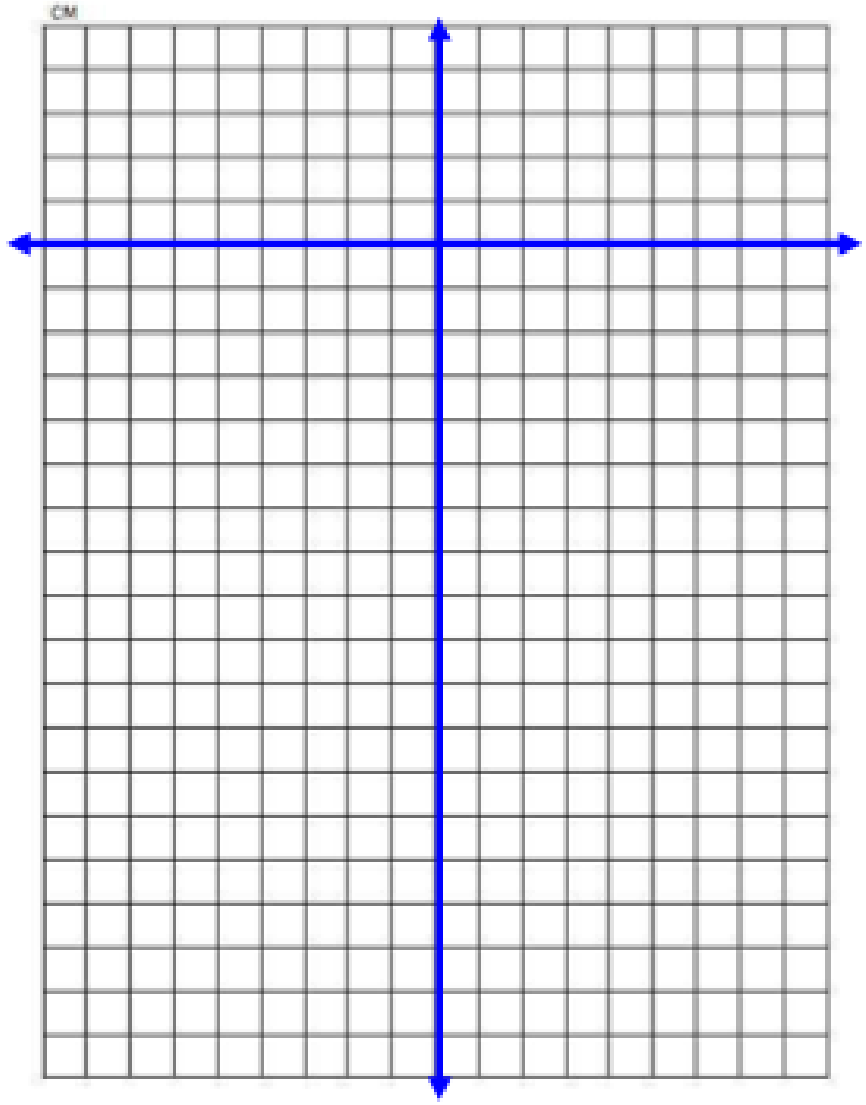
Solve the equation by factoring

5. $x^2 + 23x + 90 = 0$

6. $x^2 - 4x - 30 = 2$

Find the x-intercepts and vertex. Sketch the graph of the quadratic.

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



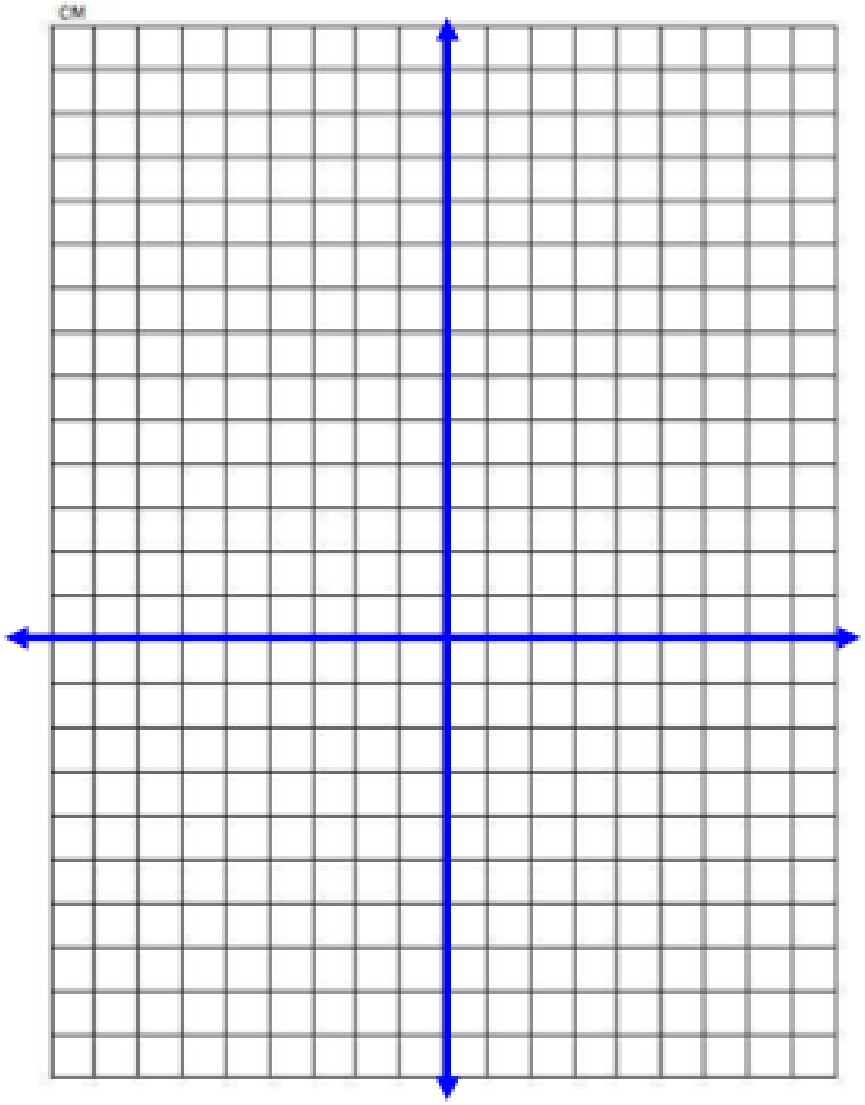
8. An arch can be modeled using the following quadratic.

$$y = \frac{-15}{400}(2x - 36)(2x + 36)$$

a. How wide is the arch?

b. How tall is the arch?

c. Sketch a graph of the arch.



1 square = 6 units

Chapter 10-1 to 10-5 Review

1. Simplify $(-2x^2 + 3x + 16) - (2x^3 + 6x^2 - 7x + 8)$

$-2x^3 + -8x^2 + 10x + 8$

2. Find the product $(6x^3 + 4x) (-2x^2 - 5)$

FOIL

$$-12x^5 + -30x^3 + -8x^3 + -20x$$

$$-12x^5 + -38x^3 + -20x$$

Use the zero product property to solve

3. $(5x - 3)(2x + 6) = 0$

$5x-3=0$ $\quad 2x+6=0$

$5x=3$ $\quad 2x=-6$

$x=\frac{3}{5}$ $\quad x=-3$

4. $(7x + 2)(5x - 15) = 0$

$7x+2=0$ $\quad 5x-15=0$

$7x=-2$ $\quad 5x=15$

$x=\frac{-2}{7}$ $\quad x=3$

Solve the equation by factoring

5. $x^2 + 23x + 90 = 0$

$(x+18)(x+5)=0$

$x=-18$ and -5

6. $x^2 - 4x - 30 = 2$

$x^2-4x-32=0$

$(x-8)(x+4)=0$

$x=8$ and -4

Find the x-intercepts and vertex. Sketch the graph of the quadratic.

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

$x = \frac{-b}{2a} = \frac{-2}{2} = \frac{2}{2} = 1$

Find x-intercepts

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

$x = 5$ and -3

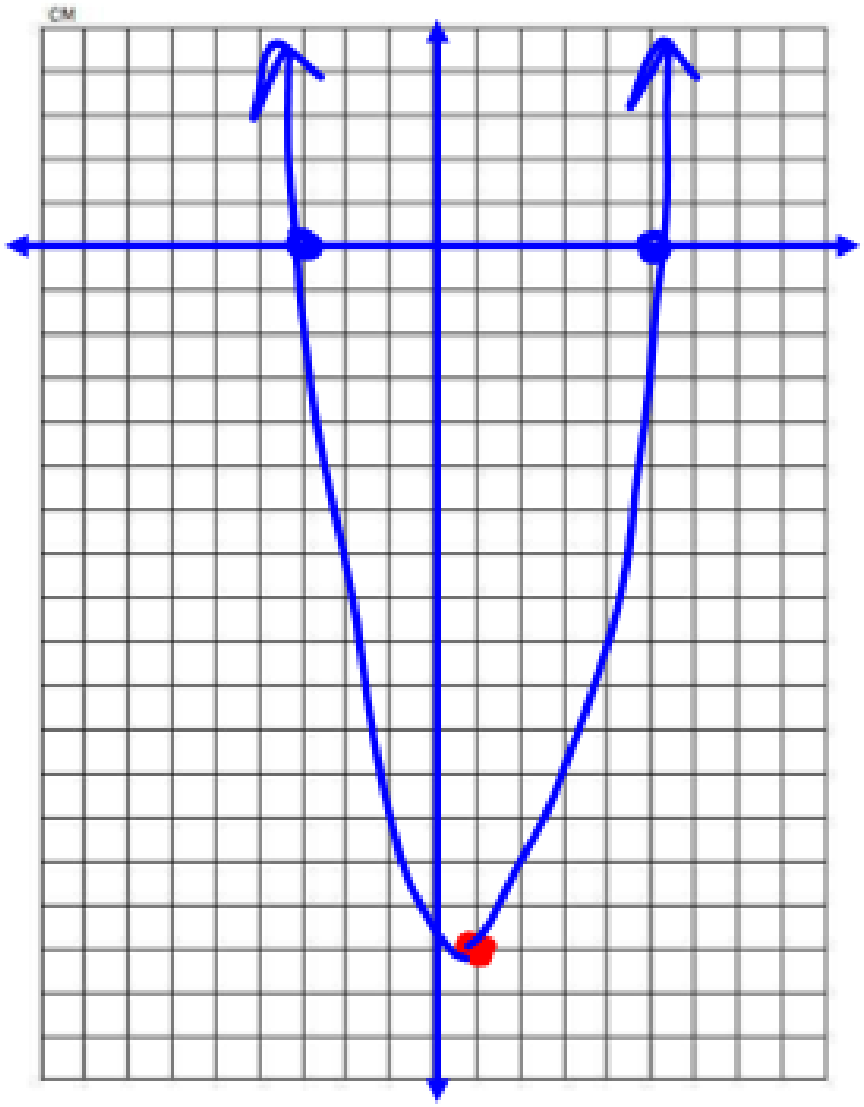
Find vertex $(1,-16)$

line of symmetry $x=1$

Substitute 1 into x and solve for y

$y = (1-5)(1+3)$

$= -4 \cdot 4 = -16$



8. An arch can be modeled using the following quadratic.

$$y = \frac{-15}{400}(2x - 36)(2x + 36)$$

a. How wide is the arch? 36 units

b. How tall is the arch?

c. Sketch a graph of the arch.

a. Find x-intercepts

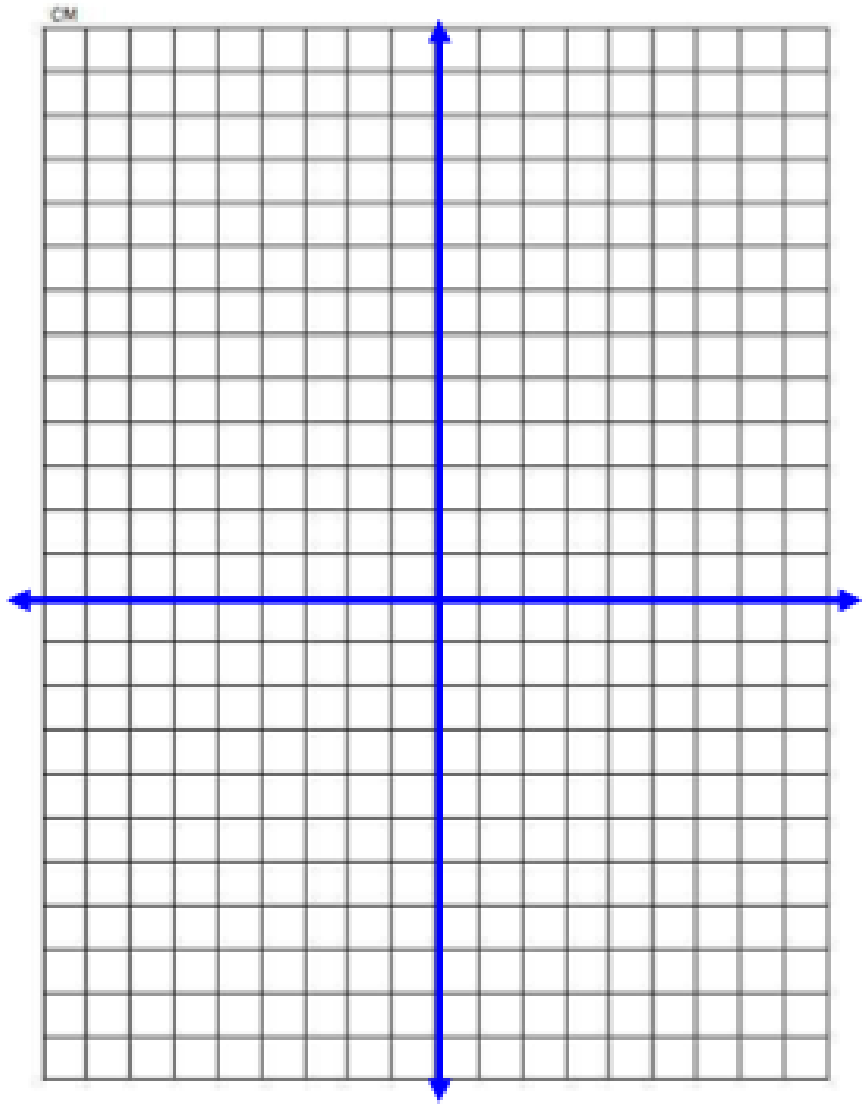
$2x - 36 = 0$ $\quad$ $2x + 36 = 0$

$2x = 36$ $\quad$ $2x = -36$

$x = 18$ $\quad$ $x = -18$

b. Find vertex

line of symmetry $x = 0$



1 square = 6 units

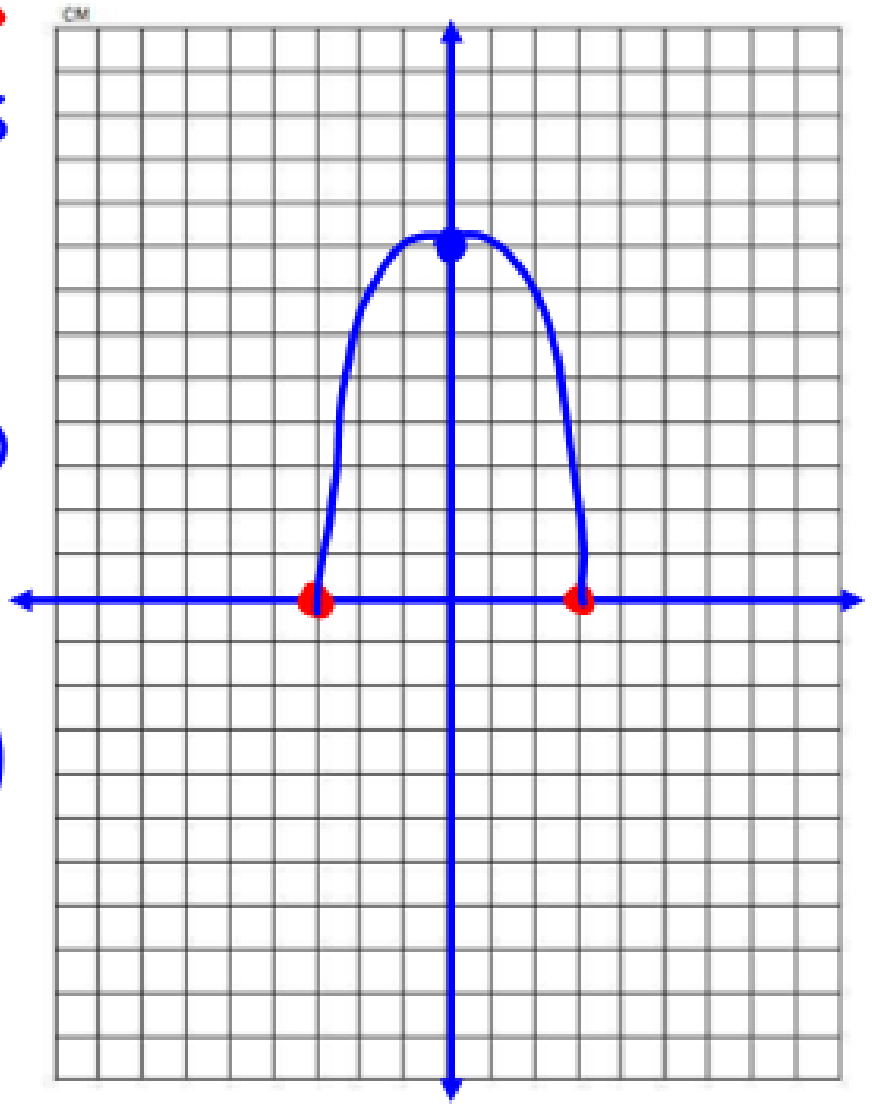
8. An arch can be modeled using the following quadratic.

$$y = \frac{-15}{400}(2x - 36)(2x + 36)$$

a. How wide is the arch? 36 units

b. How tall is the arch? 48.6 units

c. Sketch a graph of the arch.



1 square = 6 units

b. Find vertex

line of symmetry $x = 0$

Substitute 0 for x

$$y = \frac{-15}{400}(2(0) - 36)(2(0) + 36)$$

$$= \frac{-15}{400} \cdot -36 \cdot 36$$

$$= 48.6$$