Find all real and imaginary solutions by using the quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Round real answers to the nearest hundredth and simplify imaginary answers.

$$7x^2 - 8x - 10 = 0$$

Solution

Solutions are: $x = -0.75, 1.90$

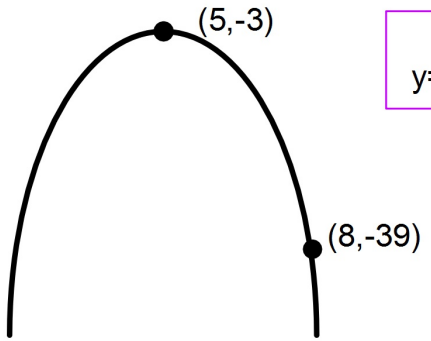
2. Find all real and imaginary solutions by factoring.

$$3x^5 + 57x^3 - 450x = 0$$

Solution

, Solutions are: $\pm\sqrt{6}, 0, \pm 5i$

3. Write the equation of this parabola:



Solution

$y = -4 (x-5)^2 - 3$

Simplify.

$$\frac{x^2 - 16}{2x^3 - 10x^2} \cdot \frac{4x^3 - 12x^2 - 40x}{x^2 - 2x - 8}$$

Solution

$$= \frac{2(x+4)}{x}$$

5. A company makes snowmobiles and wants to maximize their profit. The following function models their profit P as a function of the number of snowmobiles s made. Find the number of snowmobiles that maximize their profit and what that maximum profit is.

$$P(s) = -24s^2 - 2208s + 357,400$$

Solution

46 snowmobiles

205,048 max profit