

QUIZ 5 - MATH 111

Friday, October 4

YOUR NAME: _____

George Voutsadakis

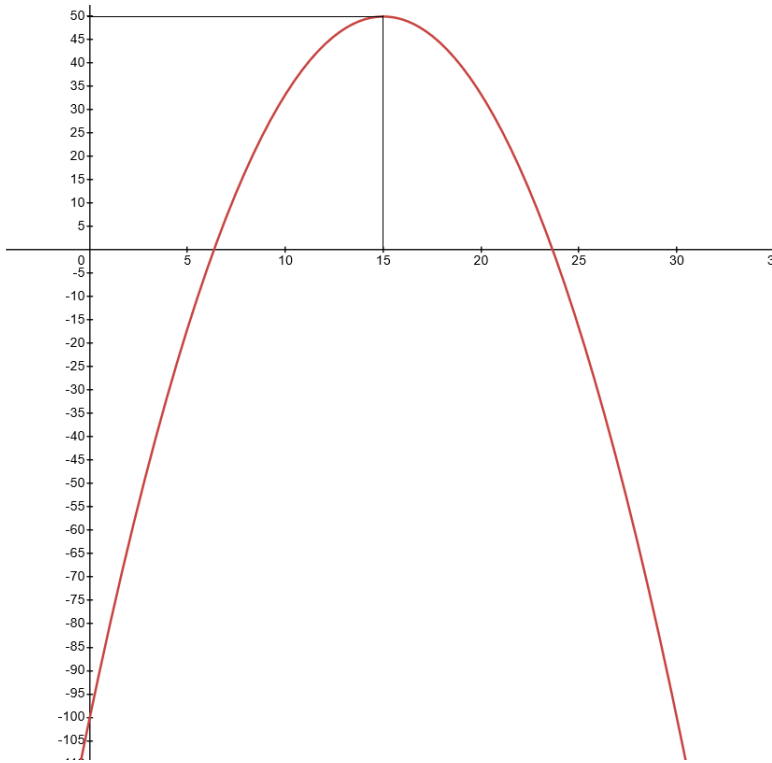
Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. [4 points] Convert between the general and the standard form as appropriate.

(a) $y = 7x^2 - 42x + 3$

(b) $y = -3(x + 5)^2 + 12.$

2. [4 points] Find an equation in the general form for the parabola shown.



3. [4 points] A university club treasurer finds that, in a club “pie sale” fundraiser, 200 pies are sold if the price is set at \$3 per pie, but only 160 pies are sold if the price is increased to \$5.

(a) Find a linear equation for the number $n(p)$ of pies sold in terms of the price p .

(b) Help the treasurer to set the price so as to maximize the revenue of the club from the fundraiser.

4. [4 points] Consider the function $f(x) = -3x^2(x + 2)(x - 4)^3$.

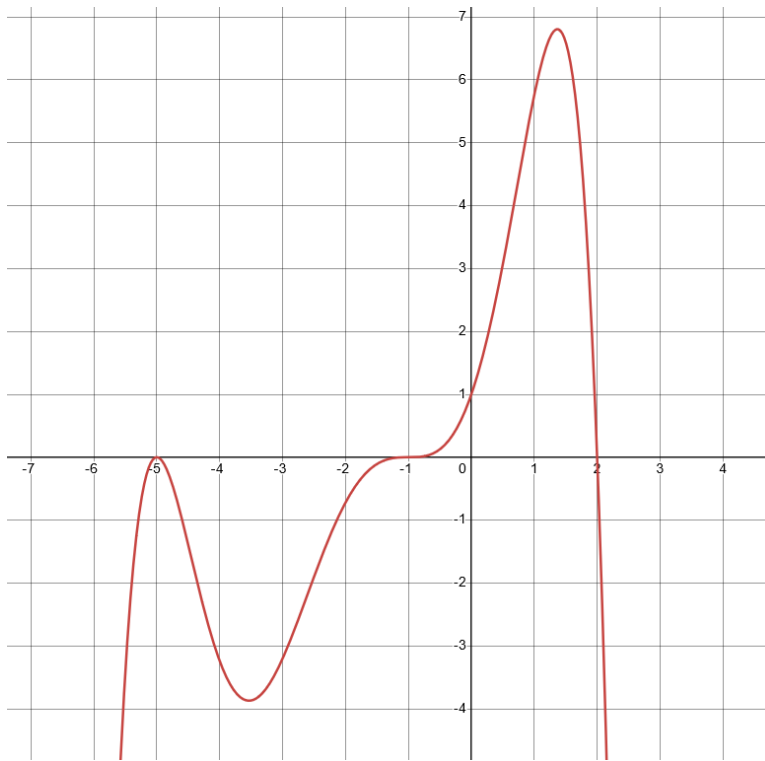
(a) Describe formally the end-behavior of $y = f(x)$.

(b) Find the y -intercept.

(c) Find the x -intercepts with their associated multiplicities.

(d) Sketch as neatly as you can the graph of $y = f(x)$. Make sure to clearly label the important points.

5. Consider the function $y = f(x)$ whose graph is shown below.



- (a) Describe formally the end-behavior.

- (b) Find the y -intercept.

- (c) Find the x -intercepts with their multiplicities.

- (d) Find a possible formula for the function $y = f(x)$.