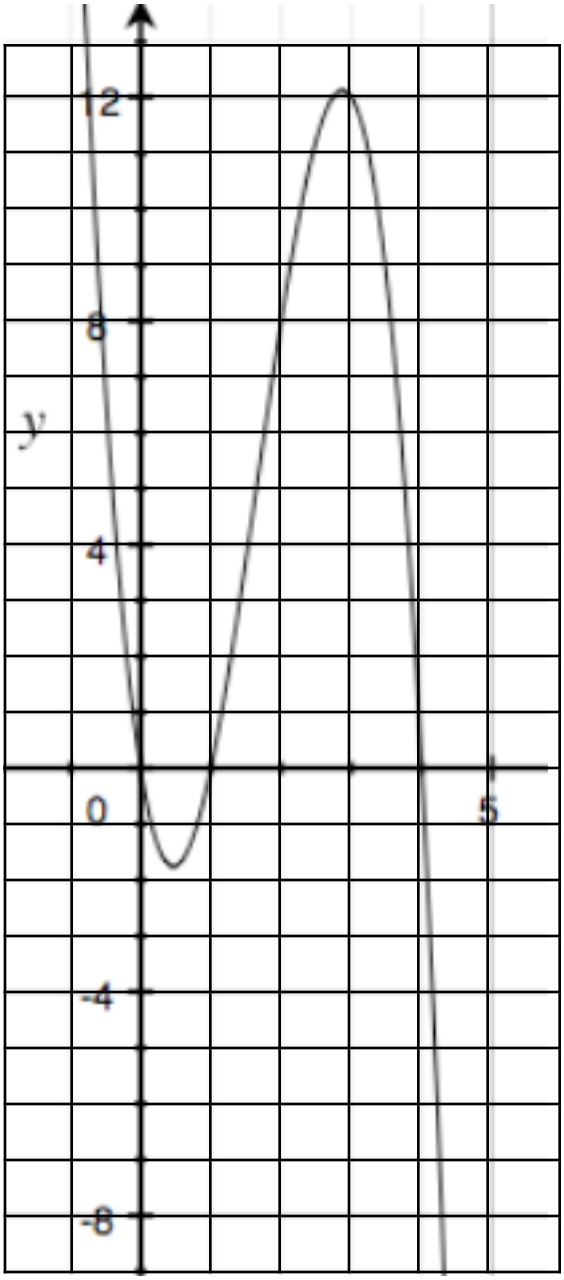
Name: _____ **TC**

CLASSWORK 44

This is a graph of $y = -2x^3 + 10x^2 - 8x$.



1. Predict from the graph over what intervals or at what point the derivative will be:

a) Positive

b) Negative

c) Zero

d) The greatest value

2. Use calculus to find:

a) Where, exactly is the derivative 0?

b) Where is the derivative equal to -3?

c) What is the slope at x = 1.5?

d) When **is** the slope the highest?

3. Two numbers add up to 100. Maximize their product.

4. Two numbers multiply to give 24. Minimize their sum.

5. a) You have 200 feet of fencing to fence in a playground. What should the dimensions be in order to maximize the area?

b) What shape would the playground be?

Practice Problems

1. Find the maxima and minima of $y = 2x^3 - 10x + 4$

2. Two numbers add to 20. What is the maximum product?

3. The perimeter of a rectangle is 100. What should the dimensions be to maximize area?