Name: _____ **TC**

CLASSWORK 42

1. Find the slope of the graph $y = x^3 - 4x^2 + 1/x$ at $x = 2$.

2. When does the graph of $y = \sqrt{x}$ have a slope of 1/8 ?

3. For each function, find the extrema (maxs & mins) and then check your answer using the calculator.

a) $y = 3x^2 - 6x + 5$

b) $y = x^3 - 4.5x^2 - 30x + 7$

c) $y = 1/x - 1/x^2$

d) $y = 4/3x^3 - 25x - 4$

e) $y = x^3 - 3x^2 + 3x - 5$

f) $y = 1/x$

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

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

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?