**Name:** _____ **TC**

## CLASSWORK 43

1. Given the function $y = x/4 + 2/x^2$

a) Find the slope at $x = 3$.

b) When does the curve have a slope of 3/4?

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

a) $y = 1/4x^2 - 3x + 7$

b) $y = 1/3x^3 - 7x^2 + 12x - 1$

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

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

e) $y = 1/x$

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?