

1.

Find the slope of the tangent line to the curve

$$2x^2 - 2xy + 2y^3 = 110$$

at the point $(-4, 3)$.

2.

If $5x^2 + 4x + xy = 3$ and $y(3) = -18$, find $y'(3)$ by implicit differentiation.

3.

Use implicit differentiation to find the equation of the tangent line to the curve $xy^3 + xy = 16$ at the point $(8, 1)$. The equation of this tangent line can be written in the form $y = mx + b$ where m

m is:

and where b is:

4. A street light is at the top of a 10 ft tall pole. A woman 6 ft tall walks away from the pole with a speed of 5 ft/sec along a straight path. How fast is the tip of her shadow moving when she is 50 ft from the base of the pole?

5. Find $\int (5x^5 + 6x^2) dx$

6. Find $\int (x+3)(x-7) dx$

7. Approximate the area under the curve $y = x^2$ from $x = 2$ to $x = 5$ using a Right Endpoint approximation with 6 subdivisions.

.... same like this