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Computer Engineering 19/ENG02/061
MAT 104

2) $2y^2 - 5x^4 - 2 - 7y^3 = 0$

$4y\frac{dy}{dx} - 20x^3 - 0 - 21y^2\frac{dy}{dx} = 0$

$(4y - 21y^2)\frac{dy}{dx} = 20x^3$

$\frac{dy}{dx} = \frac{20x^3}{4y - 21y^2}$

3.) $4x^2 + 2xy^3 - 5y^2 = 0$

$8x + 2(x\frac{dy}{dx}$

$8x + 2(x \cdot 3y^2\frac{dy}{dx} + y^3 \cdot 1) - 10y\frac{dy}{dx} = 0$

$8x + 6xy^2\frac{dy}{dx} + 2y^3 - 10y\frac{dy}{dx} = 0$

$(6xy^2 - 10y)\frac{dy}{dx} = -2y^3 - 8x$

$\frac{dy}{dx} = \frac{-2y^3 - 8x}{(6xy^2 - 10y)}$

When $x = 1$ and $y = 2$

$$\frac{dy}{dx} = \frac{-2(2)^3 - 8(1)}{6(1)(2)^2 - 10(2)}$$

$$= \frac{-16 - 8}{24 - 20}$$

$$\frac{dy}{dx} = \frac{-24}{4} \approx -6$$