

Warm-up

Implicit Differentiation

3. Find $\frac{dy}{dx}$ if $3xy = 4x + y^2$

A) $\frac{4 - 3y}{3x - 2y}$

B) $\frac{3x - 4}{2x}$

C) $\frac{3y - x}{2}$

D) $\frac{4 - 3y}{2y - 3x}$

E) $\frac{4 + 3y}{2y + 3x}$

4. Find $\frac{dy}{dx}$ if $e^{x+y} = y$

A) $\frac{e^{x+y}}{1-e^{x+y}}$

B) $\frac{e^{x+y}}{1+e^{x+y}}$

C) $\frac{e^{x+y}}{e^{x+y} - 1}$

D) e^{x+y}

E) $2e^{x+y}$

16. If $x^2 + y^2 = 6$, then $\frac{d^2y}{dx^2} =$

(A) $\frac{-6}{y^3}$

(B) $\frac{(x^2 + y^2)}{y^3}$

(C) $\frac{6}{y^3}$

(D) $\frac{6}{y^2}$

(E) $\frac{x - y}{y^2}$

Find $\frac{d^2 y}{dx^2}$, for the equation $x^{\frac{7}{3}} + y^{\frac{7}{3}} = 5$