

EMCF 12

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- Find dy/dx at $(0,1)$ for the graph of $x^2 + 2xy + y^3 = 1$.
 - 0
 - $1/3$
 - $-1/3$
 - $1/2$
 - $-1/2$
 - None of these.
- Find the slope of the tangent line to the graph of $x^2 + 2xy + y^3 = 1$ at the point $(0,1)$.
 - $1/3$
 - $-1/3$
 - $1/2$
 - $-1/2$
 - 0
 - None of these.
- Find dy/dx at $(1,1)$ for the graph of $x^2 + 2xy + y^3 = 4$.
 - $-3/4$
 - $3/4$
 - $-4/3$
 - $4/3$
 - 0
 - None of these.
- Find the slope of the tangent line to the graph of $2x^2 + xy + y^3 = 4$ at the point $(1,1)$.
 - $-1/4$
 - $1/4$
 - $-4/3$
 - $4/3$
 - 0
 - None of these.

5. Find dy/dx at $(1,-1)$ for the graph of $2x^2 + xy + y^3 = x + y$.
- $-1/2$
 - $1/2$
 - -1
 - 1
 - 0
 - None of these.
6. Find the slope of the normal line to the graph of $2x^2 + xy + y^3 = x + y$ at the point $(1,-1)$.
- $1/2$
 - $-1/2$
 - 2
 - -2
 - 0
 - None of these.
7. Find a formula for dy/dx for points on the graph of $x^2 + xy + y^3 = 1$.
- $(-2x - y)/(x + 3y^2)$
 - $(-2x + y)/(x + 3y^2)$
 - $(-x - 2y)/(x + 3y^2)$
 - $(-x + 2y)/(x + 3y^2)$
 - $(-x - y)/(x + 3y^2)$
 - None of these.
8. Find a formula for dy/dx for points on the graph of $2x^2 + xy + y^3 = x + y$.
- $(1 + 4x - y)/(x + 3y^2 - 1)$
 - $(1 - 4x + y)/(x + 3y^2 - 1)$
 - $(1 + 4x + y)/(x + 3y^2 - 1)$
 - $(-1 + 4x - y)/(x + 3y^2 - 1)$
 - $(1 - 4x - y)/(x + 3y^2 - 1)$
 - None of these.

9. Suppose $G(x) = f(u(x))$ and each of f and u are differentiable functions. If $f(1) = 2$, $f(3) = -1$, $f'(1) = -1$, $f'(3) = 5$, $u(2) = 3$, $u'(2) = 4$, then find $G'(2)$.
- a. -4.
 - b. 4,
 - c. -5.
 - d. 5.
 - e. 3.
 - f. None of these.
10. Suppose $G(x) = f(u(x))$ and each of f and u are differentiable functions. If $f(1) = 3$, $f(3) = -2$, $f'(1) = 1$, $f'(3) = 4$, $u(2) = 1$, $u'(2) = -3$, then find $G'(2)$.
- a. -4.
 - b. 4,
 - c. -5.
 - d. 5.
 - e. 3.
 - f. None of these.