

No calculators will be allowed and no partial credit will be given.

1. Find f_y given $f(x, y) = 3x e^{x^2 y}$.
2. Find f_y given $f(x, y) = -3(x^3 y - 2x y^2)$.
3. Find $\frac{\partial f}{\partial x}$ given $f(x, y) = 3y e^{x^2 y}$.
4. Find $\frac{\partial f}{\partial x}$ given $f(x, y) = -3(x^2 y + 2x y)$.
5. Find $f_y(1, 1)$ given $f(x, y) = x y^3 - 3x^2 y$.
6. Find $\frac{\partial f}{\partial x}(2, 1)$ given $f(x, y) = 3y e^{y^2} + x^2 y^2$.
7. Find $f_y\left(0, \frac{\pi}{2}\right)$ given $f(x, y) = 2 \cos(y + 2x)$.
8. Find $\frac{\partial f}{\partial x}(0, \pi)$ given $f(x, y) = -3 \cos(y + 3x)$.
9. Find f_y given $f(x, y, z) = x y^2 z + 3x e^{x y}$.
10. Find f_x given $f(x, y, z) = \cos(z^3 + x y^2)$.
11. Find $\frac{\partial f}{\partial z}$ given $f(x, y, z) = \cos(2z^3 + 3x y)$.

1. $3x^3 e^{x^2 y}$
2. $-3(x^3 - 4xy)$
3. $6xy^2 e^{x^2 y}$
4. $-3(2xy + 2y)$
5. 0
6. 4
7. -2
8. 0
9. $2xyz + 3x^2 e^{xy}$
10. $-y^2 \sin(z^3 + xy^2)$
11. $-6z^2 \sin(2z^3 + 3xy)$