

SHOW ALL YOUR WORK. NO CREDITS FOR WNSWERS NOT SUPPORTED BY WORK.

Problem 1:

- (a) Find the domain of the function; $z = \frac{1}{\sqrt{x^2 + y^2 - 1}}$.
- (b) Find the equation of the plane which is parallel to yz -plane and passes through the point (5,6,7).
- (c) Sketch the surface: $z = x^2$.

Problem 2: Consider the function $f(x, y) = \cos(x^2 - y^2)$. Find $f_{xy}(1,1)$.

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Problem 1:

- (a) Find the domain of the function; $z = \ln(4 - x^2 - y^2)$.
- (b) Find the equation of the plane which is parallel to xz -plane and passes through the point (5,6,7).
- (c) Sketch the surface: $z = y^2$.

Problem 2: Consider the function $f(x, y) = e^{x^2 - y^2}$. Find $f_{yx}(1,1)$.

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Problem 1:

- (a) Find the domain of the function; $z = \sqrt{4 - x^2 - y^2}$.
- (b) Find the equation of the plane which is parallel to xy -plane and passes through the point (5,6,7).
- (c) Sketch the surface: $y = x^2$.

Problem 2: Consider the function $f(x, y) = e^{x^2 - y^2}$. Find $f_{xy}(1,1)$.