

## TOTAL DIFFERENTIAL

For each of the following functions, find the total differential.

1.  $z = f(x, y) = x^3 y^2$

2.  $z = f(x, y) = \sin(x^3 y^2)$

3.  $z = f(x, y) = \sqrt{x^3 y^2}$

4.  $z = f(x, y) = \sec(x^3 y^2)$

5.  $z = f(x, y) = \tan(x^3 y^2)$