

## SECOND PARTIALS

For each of the functions below, find  $z_{xx}$ ,  $z_{xy}$ ,  $z_{yx}$ , and  $z_{yy}$ .

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

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

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

4.  $z = f(x, y) = \ln(xy)$

5.  $z = f(x, y) = x^3 - 6x + y^3 - 9y$