GRADIENT TO A LEVEL CURVE

For each of the following functions, find ∇z, the gradient.

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