

$$7x^2y + 6z^2 + 3xy^2 = 10$$

Assuming this is what you mean

$$14xy + 6 \cdot 2 \cdot z \cdot \frac{\partial}{\partial x} z + 3y^2 = 0$$

Differentiate with respect to x . Keep any factors with y as they are.

Use the chain rule on z^2 because it's an implicit function x and y .
 z^2 really means $z(x,y)^2$

$$12z \cdot \frac{\partial}{\partial x} z = -3y^2 - 14xy$$

Move terms to the right side with subtraction

$$\frac{\partial}{\partial x} z = \frac{-3y^2 - 14xy}{12z}$$

Divide both sides by $12z$