

BASIC INGREDIENTS FOR IMPLICIT DIFFERENTIATION

$$1. \frac{d}{dx}(x) = 1$$

$$2. \frac{d}{dy}(y) = 1$$

$$3. \frac{d}{dx}(x^2) = 2x$$

$$4. \frac{d}{dy}(y^2) = 2y$$

$$5. \frac{d}{dx}(y^2) = 2y \cdot \frac{dy}{dx}$$

$$6. \frac{d}{dx}(y^4) = 4y^3 \cdot \frac{dy}{dx}$$

$$7. \frac{d}{dx}(x + y^2) = 1 + 2y \frac{dy}{dx}$$

$$8. \frac{d}{dx}(x y^2) = x \cdot 2y \frac{dy}{dx} + 1 \cdot y^2$$

$$9. \frac{d}{dx}(\sin y) = \cos y \cdot \frac{dy}{dx}$$

$$10. \frac{d}{dx}[\sin(y^2)] = \cos(y^2) \cdot 2y \frac{dy}{dx}$$