

Math Sheet

Name _____ Score _____ Teacher _____ Date _____

Implicit Differentiation

Find dy/dx for each implicit equation. Treat y as a function of x , and keep product and chain rule factors visible.

1. Find dy/dx .

$$5 \cdot x - 1 \cdot y = -12$$

Treat y as a function of x . Show product and chain rule work where needed.

2. Find dy/dx .

$$4 \cdot x^3 \cdot y - 2 \cdot x^3 = 48$$

Treat y as a function of x . Show product and chain rule work where needed.

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Implicit Differentiation

Find dy/dx for each implicit equation. Treat y as a function of x , and keep product and chain rule factors visible.

3. Find dy/dx .

$$-1 \cdot y - 3 \cdot (-1 \cdot x \cdot y - 1 \cdot x - 2)^2 = -12$$

Treat y as a function of x . Show product and chain rule work where needed.

4. Find dy/dx .

$$-4 \cdot x^4 + 2 \cdot y^4 - 2 \cdot y^3 - 4 \cdot x^2 = -76$$

Treat y as a function of x . Show product and chain rule work where needed.

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Implicit Differentiation

Find dy/dx for each implicit equation. Treat y as a function of x , and keep product and chain rule factors visible.

5. Find dy/dx .

$$-3x^4 \cdot y + x \cdot y - 5y = 51$$

Treat y as a function of x . Show product and chain rule work where needed.

6. Find dy/dx .

$$-2y^4 + x - 1 \cdot (-2x^2 - 4y - 2)^4 = -20769$$

Treat y as a function of x . Show product and chain rule work where needed.

Implicit Differentiation

Find dy/dx for each implicit equation. Treat y as a function of x , and keep product and chain rule factors visible.

7. Find dy/dx .

$$2 \cdot x^2 + 2 \cdot y = 10$$

Treat y as a function of x . Show product and chain rule work where needed.

8. Find dy/dx .

$$-4 \cdot x^4 \cdot y + 2 \cdot x^2 \cdot y^2 + 2 \cdot x \cdot y = -4$$

Treat y as a function of x . Show product and chain rule work where needed.

Implicit Differentiation

Find dy/dx for each implicit equation. Treat y as a function of x , and keep product and chain rule factors visible.

9. Find dy/dx .

$$-1 \cdot x - 3 \cdot (-2 \cdot x + y + 4)^3 = -2998$$

Treat y as a function of x . Show product and chain rule work where needed.

10. Find dy/dx .

$$5 \cdot x^4 - 3 \cdot y^2 = 68$$

Treat y as a function of x . Show product and chain rule work where needed.
