Task card 1 Implicit Differentiation

Find the slope of the curve $2x^2 + 2xy + 2y^2 - 2x - 2y = 4$ at the point $(0, -1)$.

Task card 2 Implicit Differentiation

Find the equation of the tangent line to $xy - y^2 + x = 5$ at the point $(3, 2)$.

Task card 3 Implicit Differentiation

Find the slope of the curve $y^2 = x^3 - 4x + 1$ at the point $(-1, 2)$.

Task card 4 Implicit Differentiation

Find the slope of the curve $x^2y + xy^2 = 2$ at the point $(1, -2)$.

Task card 5 Implicit Differentiation

Find the slope of the curve $3x^2 + xy - 2y^2 + x = -18$ at the point $(0, -3)$.

Task card 6 Implicit Differentiation

Find the equation of the tangent line to $x^2 - 3xy - x + 4y = 38$ at the point $(-3, 2)$.

Task card 7 Implicit Differentiation

Find the slope of the curve $x^2 - 9y^2 = -27$ at the point (-3, -2).

Task card 8 Implicit Differentiation

Find the equation of the tangent line to $3x^2 - 3xy + y^2 - 3x + 4y = 2$ at the point (1, 1).

Task card 9 Implicit Differentiation

Find the slope of the curve $2x^2 - xy + 2y^2 - x + y = 6$ at the point (0, -2).

Task card 10 Implicit Differentiation

Find the equation of the tangent line to $-2x^2 + 2xy - y^2 - 4x + y = 2$ at the point (-2, -1).

Task card 11 Implicit Differentiation

Find the slope of the curve $y^2 = x^3 - 4x + 22$ at the point (-1, -5).

Task card 12 Implicit Differentiation

Find the slope of the curve $x^2y + xy^2 = 6$ at the point (2, 1).

Task card 13 Implicit Differentiation

Find the slope of the curve $-2x^2 - 3xy - 2y^2 + x - 4y = 6$ at the point $(2, -3)$.

Task card 14 Implicit Differentiation

Find the equation of the tangent line to $-x^2 + xy + 3y^2 + 2x - 4y = -3$ at the point $(3, 0)$.

Task card 15 Implicit Differentiation

Find the slope of the curve $3x^2 - 7y^2 = -60$ at the point $(-1, 3)$.

Task card 16 Implicit Differentiation

Find the slope of the curve $y^2 = x^3 + 3x$ at the point $(1, -2)$.

Task card 17 Implicit Differentiation

Find the slope of the curve $3x^2 - 3xy - 2y^2 + 3x - 2y = 6$ at the point $(-2, 0)$.

Task card 18 Implicit Differentiation

Find the equation of the tangent line to $-2x^2 + xy + 2y^2 - 3y = -2$ at the point $(-1, 0)$.

Task card 19 Implicit Differentiation

Find the slope of the curve $y^2 = x^3 + 4x - 12$ at the point (2, 2).

Task card 20 Implicit Differentiation

Find the slope of the curve $x^2y + xy^2 = -12$ at the point (-3, -1).

Task card 21 Implicit Differentiation

Find the slope of the curve $-x^2 + xy + 3y^2 + 3x - y = -3$ at the point (-1, 1).

Task card 22 Implicit Differentiation

Find the equation of the tangent line to $-x^2 + 3xy + 2y^2 - x + 2y = 6$ at the point (-1, 2).

Task card 23 Implicit Differentiation

Find the slope of the curve $7x^2 + y^2 = 67$ at the point (-3, -2).

Task card 24 Implicit Differentiation

Find the slope of the curve $-x^2 - xy - 4x - 2y = -11$ at the point (1, 2).

Implicit Differentiation Task Cards

Recording sheet · Grade 12 · Find dy/dx as one fraction in x and y, written like -x/y, -4x/(9y) or (3x² - 2)/(2y) with the numbers in lowest terms, or find the slope at the point (a whole number or a fraction in simplest form). Write tangent lines as y = mx + b.

Scan to check your answers

Name: _____ Date: _____

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24

Implicit Differentiation Task Cards: Answer Key

Grade 12 · Hard

The answers online

1. $-\frac{2}{3}$	**2.** $y = 3x - 7$	**3.** $-\frac{1}{4}$
4. 0	**5.** $\frac{1}{6}$	**6.** $y = x + 5$
7. $\frac{1}{6}$	**8.** $y = 1$	**9.** $\frac{1}{7}$
10. $y = 2x + 3$	**11.** $\frac{1}{10}$	**12.** $-\frac{5}{8}$
13. -1	**14.** $y = -4x + 12$	**15.** $-\frac{1}{7}$
16. $-\frac{3}{2}$	**17.** $\frac{9}{4}$	**18.** $y = x + 1$
19. 4	**20.** $-\frac{7}{15}$	**21.** $-\frac{3}{2}$
22. $y = -x + 1$	**23.** $-\frac{21}{2}$	**24.** $-\frac{8}{3}$