Task card 1 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -x^3 + 2x^2 + 3x + 2$ at the point P(2, 8).

Task card 2 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -x^3 + 3x^2 - 1$ at the point P(-3, 53).

Task card 3 Slope & Equation of a Tangent Line

At what x-value is the tangent line to $f(x) = -x^2 - 12x + 3$ horizontal?

Task card 4 Slope & Equation of a Tangent Line

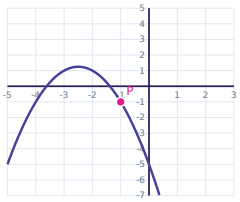
Find the slope of the tangent line to $f(x) = x^3 + 2x^2 + 4x - 2$ at $x = -3$.

Task card 5 Slope & Equation of a Tangent Line

Find the slope of the normal line (perpendicular to the tangent) to $f(x) = -x^3 + 3x^2 - 4$ at $x = -2$.

Task card 6 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -x^2 - 5x - 5$ at the point P(-1, -1).



Task card 7 Slope & Equation of a Tangent Line

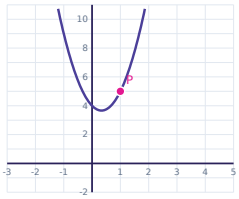
Find the equation of the tangent line to $f(x) = -x^3 + 3x^2 - 5x + 2$ at the point P(-2, 32).

Task card 8 Slope & Equation of a Tangent Line

Find the slope of the tangent line to $f(x) = x^3 - x^2 + x + 6$ at $x = 2$.

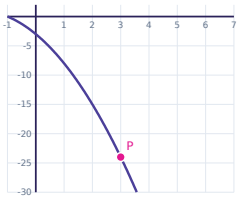
Task card 9 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = 3x^2 - 2x + 4$ at the point P(1, 5).



Task card 10 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -x^2 - 4x - 3$ at the point P(3, -24).

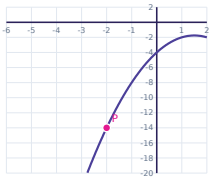


Task card 11 Slope & Equation of a Tangent Line

At what x-value is the tangent line to $f(x) = 2x^2 - 24x + 5$ horizontal?

Task card 12 Slope & Equation of a Tangent Line

Find the slope of the tangent line to $f(x) = -x^2 + 3x - 4$ at $x = -2$.



Task card 13 Slope & Equation of a Tangent Line

Find the slope of the tangent line to $f(x) = x^3 - x^2 - 5x + 3$ at $x = -1$.

Task card 14 Slope & Equation of a Tangent Line

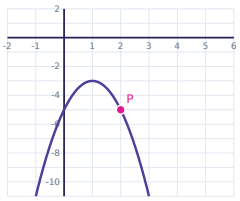
Find the slope of the normal line (perpendicular to the tangent) to $f(x) = -x^3 + x^2 + x + 4$ at $x = -1$.

Task card 15 Slope & Equation of a Tangent Line

At what x-value is the tangent line to $f(x) = -2x^2 + 20x + 3$ horizontal?

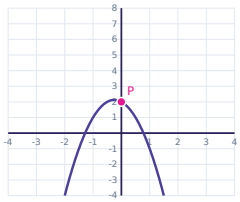
Task card 16 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -2x^2 + 4x - 5$ at the point P(2, -5).



Task card 17 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -2x^2 - x + 2$ at the point P(0, 2).

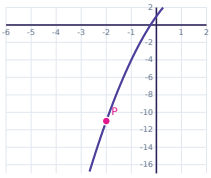


Task card 18 Slope & Equation of a Tangent Line

At what x-value is the tangent line to $f(x) = 2x^2 - 16x - 9$ horizontal?

Task card 19 Slope & Equation of a Tangent Line

Find the slope of the tangent line to $f(x) = -x^2 + 4x + 1$ at $x = -2$.



Task card 20 Slope & Equation of a Tangent Line

Find the slope of the normal line (perpendicular to the tangent) to $f(x) = x^3 - 2x^2 + 5x + 2$ at $x = -1$.

Task card 21 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = x^3 + x^2 - 5x - 1$ at the point $P(-3, -4)$.

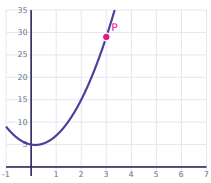
Task card 22 Slope & Equation of a Tangent Line

Find the slope of the tangent line to $f(x) = 3x^2 - 3x$ at $x = -2$.



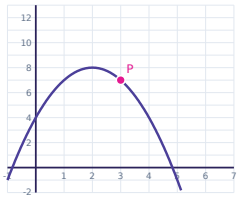
Task card 23 Slope & Equation of a Tangent Line

Find the slope of the tangent line to $f(x) = 3x^2 - x + 5$ at $x = 3$.



Task card 24 Slope & Equation of a Tangent Line

Find the equation of the tangent line to $f(x) = -x^2 + 4x + 4$ at the point $P(3, 7)$.



Slope & Equation of a Tangent Line Task Cards

Recording sheet · Grade 12 · Answer each question. Write tangent lines in the form y = mx + b.

Name: _____ Date: _____

Scan to check your answers

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

Slope & Equation of a Tangent Line Task Cards: Answer Key

Grade 12 · Hard

The answers online

1. $y = -x + 10$	**2.** $y = -45x - 82$	**3.** $x = -6$
4. 19	**5.** $\frac{1}{24}$	**6.** $y = -3x - 4$
7. $y = -29x - 26$	**8.** 9	**9.** $y = 4x + 1$
10. $y = -10x + 6$	**11.** $x = 6$	**12.** 7
13. 0	**14.** $\frac{1}{4}$	**15.** $x = 5$
16. $y = -4x + 3$	**17.** $y = -x + 2$	**18.** $x = 4$
19. 8	**20.** $\frac{1}{-12}$	**21.** $y = 16x + 44$
22. -15	**23.** 17	**24.** $y = -2x + 13$