Task card 1 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = x^3 - 3x^2 + 7$.

Task card 2 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = x^3 - 6x^2 + 9x - 5$.

Task card 3 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = x^3 - 3x - 7$.

Task card 4 Derivative Tests: Critical Points...

Find the local minimum value of $f(x) = x^3 - 3x - 2$.

Task card 5 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = x^3 + 3x^2 - 9x - 5$.

Task card 6 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = x^3 - 6x^2 + 9x + 4$.

Task card 7 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = x^3 - 3x - 9$.

Task card 8 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = x^3 + 3x^2 - 9$.

Task card 9 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = x^3 - 3x - 4$.

Task card 10 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = x^3 - 3x + 8$.

Task card 11 Derivative Tests: Critical Points...

Find the point where $f(x) = x^3 + 6x^2 + 9x + 2$ has a local minimum.

Task card 12 Derivative Tests: Critical Points...

$f(x) = x^3 + 3x^2 - 9x$ has a critical number at $x = 1$. Use the second derivative test: is it a local maximum or a local minimum?

Task card 13 Derivative Tests: Critical Points...

Find the inflection point of $f(x) = x^3 - 12x - 10$.

Task card 14 Derivative Tests: Critical Points...

$f(x) = x^3 - 27x - 2$ has a critical number at $x = -3$. Use the second derivative test: is it a local maximum or a local minimum?

Task card 15 Derivative Tests: Critical Points...

Find the point where $f(x) = x^3 - 3x^2 - 9x - 4$ has a local minimum.

Task card 16 Derivative Tests: Critical Points...

Find the point where $f(x) = x^3 - 6x^2 + 9x - 6$ has a local minimum.

Task card 17 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = x^3 - 3x^2 - 24x + 4$ increasing?

Task card 18 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = x^3 - 9x^2 + 24x - 10$ decreasing?

Task card 19 Derivative Tests: Critical Points...

Find the inflection point of $f(x) = -x^3 + 9x^2 - 15x + 6$.

Task card 20 Derivative Tests: Critical Points...

On what interval is $f(x) = -x^3 - 3x^2 + 24x + 6$ concave up?

Task card 21 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = -x^3 + 6x^2 + 15x - 7$.

Task card 22 Derivative Tests: Critical Points...

Find the critical numbers of $f(x) = -x^3 + 12x + 3$.

Task card 23 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = x^3 - 6x^2 - 15x + 7$ decreasing?

Task card 24 Derivative Tests: Critical Points...

On what interval is $f(x) = x^3 + 3x^2 + 3$ concave up?

Derivative Tests: Critical Points & Concavity Task Cards

Recording sheet · Grade 12 · Write critical numbers like x = -1 or x = 3, points like (2, -5), and intervals as inequalities from left to right, like x < -1 or x > 3, or -1 < x < 3. For a local maximum or minimum value, give the y-value. For the second derivative test, answer maximum or minimum.

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

Derivative Tests: Critical Points & Concavity Task Cards: Answer Key

Grade 12 · Easy

The answers online

1. x = 0 or x = 2	**2.** x = 1 or x = 3	**3.** -5
4. -4	**5.** x = -3 or x = 1	**6.** x = 1 or x = 3
7. -7	**8.** x = -2 or x = 0	**9.** x = -1 or x = 1
10. 10	**11.** (-1, -2)	**12.** minimum
13. (0, -10)	**14.** maximum	**15.** (3, -31)
16. (3, -6)	**17.** x < -2 or x > 4	**18.** 2 < x < 4
19. (3, 15)	**20.** x < -1	**21.** 93
22. x = -2 or x = 2	**23.** -1 < x < 5	**24.** x > -1