Task card 1 Derivative Tests: Critical Points...

Find the x-values where $f(x) = x^4 - 4x^3 - 20x^2 + 96x + 6$ has a local minimum.

Task card 2 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = x^4 - 26x^2 + 48x + 5$.

Task card 3 Derivative Tests: Critical Points...

On what intervals is $f(x) = x^4 + 4x^3 - 12x^2 - 32x$ decreasing?

Task card 4 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = 2x^3 - 6x^2 - 48x - 8$ increasing?

Task card 5 Derivative Tests: Critical Points...

Find the inflection point of $f(x) = 2x^3 - 96x - 2$.

Task card 6 Derivative Tests: Critical Points...

On what interval is $f(x) = x^3 - 9x^2 + 24x + 7$ concave up?

Task card 7 Derivative Tests: Critical Points...

Find the inflection point of $f(x) = 2x^3 - 6x^2 - 7$.

Task card 8 Derivative Tests: Critical Points...

On what interval is $f(x) = 2x^3 - 6x^2 - 90x + 8$ concave up?

Task card 9 Derivative Tests: Critical Points...

Find the x-values where $f(x) = x^4 + 4x^3 - 2x^2 - 12x + 1$ has a local minimum.

Task card 10 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = x^4 + 4x^3 - 2x^2 - 12x - 5$.

Task card 11 Derivative Tests: Critical Points...

On what intervals is $f(x) = x^4 - 4x^3 - 12x^2 + 32x + 7$ decreasing?

Task card 12 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = x^3 + 9x^2 + 24x + 6$ increasing?

Task card 13 Derivative Tests: Critical Points...

Find the inflection point of $f(x) = -x^3 + 27x + 6$.

Task card 14 Derivative Tests: Critical Points...

On what interval is $f(x) = -2x^3 + 6x^2 - 4$ concave up?

Task card 15 Derivative Tests: Critical Points...

Find the x-values where $f(x) = x^4 - 4x^3 - 2x^2 + 12x + 6$ has a local minimum.

Task card 16 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = -2x^3 + 6x^2 + 48x - 3$ increasing?

Task card 17 Derivative Tests: Critical Points...

Find the x-values where $f(x) = x^4 - 26x^2 - 48x + 9$ has a local minimum.

Task card 18 Derivative Tests: Critical Points...

On what intervals is $f(x) = x^4 + 4x^3 - 20x^2 - 96x + 6$ decreasing?

Task card 19 Derivative Tests: Critical Points...

On what interval(s) is $f(x) = -2x^3 - 12x^2 - 18x - 2$ increasing?

Task card 20 Derivative Tests: Critical Points...

Find the inflection point of $f(x) = 2x^3 + 6x^2 - 48x + 5$.

Task card 21 Derivative Tests: Critical Points...

On what interval is $f(x) = x^3 - 27x + 6$ concave up?

Task card 22 Derivative Tests: Critical Points...

Find the x-values where $f(x) = x^4 - 26x^2 + 48x$ has a local minimum.

Task card 23 Derivative Tests: Critical Points...

Find the local maximum value of $f(x) = x^4 - 4x^3 - 12x^2 + 32x - 1$.

Task card 24 Derivative Tests: Critical Points...

Find the x-values where $f(x) = x^4 - 26x^2 + 48x - 8$ has a local minimum.

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 · Hard

The answers online

1. x = -3 or x = 4	**2.** 28	**3.** x < -4 or -1 < x < 2
4. x < -2 or x > 4	**5.** (0, -2)	**6.** x > 3
7. (1, -11)	**8.** x > 1	**9.** x = -3 or x = 1
10. 2	**11.** x < -2 or 1 < x < 4	**12.** x < -4 or x > -2
13. (0, 6)	**14.** x < 1	**15.** x = -1 or x = 3
16. -2 < x < 4	**17.** x = -3 or x = 4	**18.** x < -4 or -2 < x < 3
19. -3 < x < -1	**20.** (-1, 57)	**21.** x > 0
22. x = -4 or x = 3	**23.** 16	**24.** x = -4 or x = 3