Derivative Tests: Critical Points & Concavity · 1

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

Derivative Tests: Critical Points & Concavity · 2

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

Derivative Tests: Critical Points & Concavity · 3

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

Derivative Tests: Critical Points & Concavity · 4

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

Derivative Tests: Critical Points & Concavity · 5

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

Derivative Tests: Critical Points & Concavity · 6

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

Derivative Tests: Critical Points & Concavity · 7

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

Derivative Tests: Critical Points & Concavity · 8

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

Derivative Tests: Critical Points & Concavity · 2

ANSWER

28

Derivative Tests: Critical Points & Concavity · 1

ANSWER

x = -3 or x = 4

Derivative Tests: Critical Points & Concavity · 4

ANSWER

x < -2 or x > 4

Derivative Tests: Critical Points & Concavity · 3

ANSWER

x < -4 or -1 < x < 2

Derivative Tests: Critical Points & Concavity · 6

ANSWER

x > 3

Derivative Tests: Critical Points & Concavity · 5

ANSWER

(0, -2)

Derivative Tests: Critical Points & Concavity · 8

ANSWER

x > 1

Derivative Tests: Critical Points & Concavity · 7

ANSWER

(1, -11)

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

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

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

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

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

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

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

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

Derivative Tests: Critical Points & Concavity · 10

ANSWER

2

Derivative Tests: Critical Points & Concavity · 9

ANSWER

x = -3 or x = 1

Derivative Tests: Critical Points & Concavity · 12

ANSWER

x < -4 or x > -2

Derivative Tests: Critical Points & Concavity · 11

ANSWER

x < -2 or 1 < x < 4

Derivative Tests: Critical Points & Concavity · 14

ANSWER

x < 1

Derivative Tests: Critical Points & Concavity · 13

ANSWER

(0, 6)

Derivative Tests: Critical Points & Concavity · 16

ANSWER

-2 < x < 4

Derivative Tests: Critical Points & Concavity · 15

ANSWER

x = -1 or x = 3

Derivative Tests: Critical Points & Concavity · 17

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

Derivative Tests: Critical Points & Concavity · 18

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

Derivative Tests: Critical Points & Concavity · 19

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

Derivative Tests: Critical Points & Concavity · 20

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

Derivative Tests: Critical Points & Concavity · 21

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

Derivative Tests: Critical Points & Concavity · 22

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

Derivative Tests: Critical Points & Concavity · 23

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

Derivative Tests: Critical Points & Concavity · 24

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

Derivative Tests: Critical Points & Concavity · 18

ANSWER

$x < -4$ or $-2 < x < 3$

Derivative Tests: Critical Points & Concavity · 17

ANSWER

$x = -3$ or $x = 4$

Derivative Tests: Critical Points & Concavity · 20

ANSWER

(-1, 57)

Derivative Tests: Critical Points & Concavity · 19

ANSWER

$-3 < x < -1$

Derivative Tests: Critical Points & Concavity · 22

ANSWER

$x = -4$ or $x = 3$

Derivative Tests: Critical Points & Concavity · 21

ANSWER

$x > 0$

Derivative Tests: Critical Points & Concavity · 24

ANSWER

$x = -4$ or $x = 3$

Derivative Tests: Critical Points & Concavity · 23

ANSWER

16