

Name : \_\_\_\_\_

Score : \_\_\_\_\_

Teacher : \_\_\_\_\_

Date : \_\_\_\_\_

## Identify Absolute Extrema

Find all absolute extrema for each function over the given interval.

1)  $y = x^2 - 10x - 14$ ; (4, 6)

2)  $y = -2x^3 - 9x^2 - 10$ ; (-5, 3)

3)  $y = x^3 - 27x - 23$ ; (-6, 5)

4)  $y = -3x^4 - 32x^3 - 90x^2 + 10$ ; (-8, 1)

5)  $y = 3x^4 - 28x^3 + 72x^2 - 13$ ; (-1, 7)

6)  $y = -x^3 + 6x^2 - 12x + 19$ ; (0, 3)

7)  $y = -x^2 - 6x + 21$ ; (-6, 0)

8)  $y = x^2 - 6x - 6$ ; (2, 4)

9)  $y = -x^4 + 2x^2 - 10$ ; (-4, 3)

10)  $y = x^4 + 4x^3 - 8x^2 + 23$ ; (-5, 3)



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## Identify Absolute Extrema

Find all absolute extrema for each function over the given interval.

1)  $y = x^2 - 10x - 14$ ; (4, 6)

Absolute Minimum: (5, -39)

Absolute Maximum: (6, -38)

2)  $y = -2x^3 - 9x^2 - 10$ ; (-5, 3)

Absolute Minimum: (3, -145)

Absolute Maximum: (-5, 15)

3)  $y = x^3 - 27x - 23$ ; (-6, 5)

Absolute Minimum: (3, -77)

Absolute Maximum: (-3, 31)

4)  $y = -3x^4 - 32x^3 - 90x^2 + 10$ ; (-8, 1)

Absolute Minimum: (-8, -1654)

Absolute Maximum: (0, 10)

5)  $y = 3x^4 - 28x^3 + 72x^2 - 13$ ; (-1, 7)

Absolute Minimum: (0, -13)

Absolute Maximum: (7, 1114)

6)  $y = -x^3 + 6x^2 - 12x + 19$ ; (0, 3)

Absolute Minimum: (3, 10)

Absolute Maximum: (0, 19)

7)  $y = -x^2 - 6x + 21$ ; (-6, 0)

Absolute Minimum: (-6, 21)

Absolute Maximum: (-3, 30)

8)  $y = x^2 - 6x - 6$ ; (2, 4)

Absolute Minimum: (3, -15)

Absolute Maximum: (4, -14)

9)  $y = -x^4 + 2x^2 - 10$ ; (-4, 3)

Absolute Minimum: (-4, -234)

Absolute Maximum: (1, -9)

10)  $y = x^4 + 4x^3 - 8x^2 + 23$ ; (-5, 3)

Absolute Minimum: (-4, -105)

Absolute Maximum: (3, 140)

