Name : _____ Score : _____

Teacher : _____ Date : _____

Horizontal Tangents

Find every x value in the domain [-10, 10] at which the tangent line is horizontal.

Round to three decimals if necessary.

1) $y = \frac{10(x - 3)}{x^2}$

2) $y = 3\sin(-3x + 1)$

3) $y = \frac{3}{x} - \frac{1}{2(x - 2)}$

4) $y = \frac{1}{2}x^2 - 5x$

5) $y = \frac{-5(x + 1)}{x^2}$

6) $y = -2\csc(3x) - 3$

7) $y = 3\cos(2x - 2) - 2$

8) $y = \frac{1}{2}x^2 + x$

9) $y = \frac{x^2}{2(x - 3)}$

10) $y = 2\csc(-3x - 2) - 1$

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Horizontal Tangents

Find every x value in the domain [-10, 10] at which the tangent line is horizontal.

Round to three decimals if necessary.

1) $y = \frac{10(x - 3)}{x^2}$

x = 6

2) $y = 3\sin(-3x + 1)$

$x = -0.19 + \frac{n\pi}{3}$ where n is any integer

3) $y = \frac{3}{x} - \frac{1}{2(x - 2)}$

x = 1.42, 3.38

4) $y = \frac{1}{2}x^2 - 5x$

x = 5

5) $y = \frac{-5(x + 1)}{x^2}$

x = -2

6) $y = -2\csc(3x) - 3$

$x = 0.524 + \frac{n\pi}{3}$ where n is any integer

7) $y = 3\cos(2x - 2) - 2$

$x = 1 + \frac{n\pi}{2}$ where n is any integer

8) $y = \frac{1}{2}x^2 + x$

x = -1

9) $y = \frac{x^2}{2(x - 3)}$

x = 0, 6

10) $y = 2\csc(-3x - 2) - 1$

$x = -1.19 + \frac{n\pi}{3}$ where n is any integer