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

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

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

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

5) $y = \frac{1}{3}x^3 - x$

6) $y = -\sin(2x - 2) + 2$

7) $y = -\sec(-3x + 1) + 1$

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

9) $y = \frac{(x + 2)x^2}{3x} - 4$

10) $y = -\sec(2x + 1) - 1$

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

x = 1.42, 3.38

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

x = 6

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

$x = -2.285 + \frac{n\pi}{2}$ where n is any integer

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

x = -2, 0

5) $y = \frac{1}{3}x^3 - x$

x = -1, 1

6) $y = -\sin(2x - 2) + 2$

$x = 1.785 + \frac{n\pi}{2}$ where n is any integer

7) $y = -\sec(-3x + 1) + 1$

$x = 0.333 + \frac{n\pi}{3}$ where n is any integer

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

x = 1

9) $y = \frac{(x + 2)x^2}{3x} - 4$

x = -1

10) $y = -\sec(2x + 1) - 1$

$x = -0.5 + \frac{n\pi}{2}$ where n is any integer