Name : _____ Score : _____

Teacher : _____ Date : _____

The Mean Value Theorem

Find the value(s) of c that satisfy the mean value theorem. Round to three decimals where necessary.

1) $2\sin(\frac{1}{3}x) + 2$; [-5, 7]

2) $-\frac{1}{6}x^3 - \frac{2}{3}x^2 + \frac{5}{6}x$; [-5, 2]

3) $4\sin(\frac{1}{3}x) + 3$; [-3, 5]

4) $-5\cos(x)$; [-1, 5]

5) $-\frac{1}{6}x^3 - \frac{1}{3}x^2 + \frac{4}{3}x$; [6, 7]

6) $\frac{1}{2}x^2 + 5x + \frac{21}{2}$; [-1, 2]

7) $-\frac{1}{2}x^3 - 2x^2 - 2x$; [-1, 7]

8) $-\frac{1}{2}x^2 + 3x - 4$; [0, 1]

9) $3e^{x-5} - 3$; [-2, -1]

10) $-3e^{x-4}$; [1, 6]

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The Mean Value Theorem

Find the value(s) of c that satisfy the mean value theorem. Round to three decimals where necessary.

1) $2\sin(\frac{1}{3}x) + 2$; [-5, 7]

$3.38 + 6\pi n$, $15.469 + 6\pi n$

Where n is any integer

2) $-\frac{1}{6}x^3 - \frac{2}{3}x^2 + \frac{5}{6}x$; [-5, 2]

-3.361, 0.694

3) $4\sin(\frac{1}{3}x) + 3$; [-3, 5]

$2.433 + 6\pi n$, $16.417 + 6\pi n$

Where n is any integer

4) $-5\cos(x)$; [-1, 5]

$0.043 + 2\pi n$, $3.099 + 2\pi n$

Where n is any integer

5) $-\frac{1}{6}x^3 - \frac{1}{3}x^2 + \frac{4}{3}x$; [6, 7]

6.506

6) $\frac{1}{2}x^2 + 5x + \frac{21}{2}$; [-1, 2]

0.5

7) $-\frac{1}{2}x^3 - 2x^2 - 2x$; [-1, 7]

3.577

8) $-\frac{1}{2}x^2 + 3x - 4$; [0, 1]

0.5

9) $3e^{x-5} - 3$; [-2, -1]

-1.459

10) $-3e^{x-4}$; [1, 6]

4.384