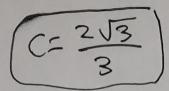
Quiz 8 SHOW ALL WORK.

1. What value of c satisfies the Mean Value Theorem for $f(x) = 2x^3 - 4x$ on [0,2]. Give exact answers.



work on other page

2. Use the closed interval method to find the coordinates of the Absolute Max and the Absolute min of $f(x) = 5\cos x - 5\sin x$ on $\left[0, \frac{3\pi}{2}\right]$. Give exact answers.

Max=5

Min =

Mean Value Theorem

$$\frac{f(b)-f(a)}{b-a}=f'(c)$$

$$f(0)=0$$

$$f'(x)=2(3)x^{2}$$

$$f(2)=2(2)^{3}-4(2)$$

$$f'(x)=6x^{2}-4$$

$$f(2)=16-8$$

$$f(2)=8$$

$$f'(c)=8-0$$

$$2-0$$

$$8=6x^{2}$$

$$6$$

$$6$$

$$f'(x) = 2(3)x^{2} - 4$$

$$f'(x) = 6x^{2} - 4$$

$$4 = 6x^{2} - 4$$

$$8 = 6x^{2}$$

$$6$$

$$f(x) = 5\cos x - 5\sin x$$

$$f'(x) = -5\sin x - 5\cos x$$

$$0 = -5\sin x - 5\cos x$$

$$f(0)=5(1)-5(0)$$

$$f(\frac{3\pi}{2}) = 5(0) - 5(-1)$$

$$f(\frac{3\pi}{2})=5$$