

Names: \_\_\_\_\_

Group #: \_\_\_\_\_

1. Determine if the Mean Value Theorem can be applied to the following function on the the given closed interval. If so, find all possible values of  $c$ :

$$f(x) = 3 + \sqrt{x}$$

on  $[0, 4]$ 

2. Determine if the Mean Value Theorem can be applied to the following function on the the given closed interval. If so, find all possible values of  $c$ :  $f(x) = x^2(x - 1)$  on  $[0, 3]$

3. Determine if the Mean Value Theorem can be applied to the following function on the the given closed interval. If so, find all possible values of  $c$ .

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

on  $[-1, 8]$

4. Determine if the Mean Value Theorem can be applied to the following function on the the given closed interval. If so, find all possible values of  $c$ :

$$f(x) = \frac{x}{1+x}$$

on  $[1, 3]$ .

5. Determine if the Mean Value Theorem can be applied to the following function on the the given closed interval. If so, find all possible values of  $c$ :  $f(x) = \sin(2x)$  on  $[0, \pi]$ .