Calculus Name_____ ID: 1

MVT and AVT

Date_____ Period____

For each problem, find the average value of the function over the given interval.

1) $f(x) = -\dfrac{3}{x+3}$; $[-2, 1]$

2) $f(x) = x^3 - 3x^2 + 4$; $[-1, 3]$

3) $f(x) = -2x^2 - 16x - 34$; $[-5, -3]$

4) $f(x) = -x^5 + 4x^3 - 3x - 3$; $[-2, 1]$

For each problem, find the values of *c* that satisfy the Mean Value Theorem for Integrals.

5) $f(x) = \dfrac{2}{(x-1)^2}$; $[2, 5]$

6) $f(x) = 5(2x-2)^{\frac{1}{2}}$; $[1, 2]$

7) $f(x) = 3x^{\frac{1}{2}}$; $[0, 3]$

8) $f(x) = x + 1$; $[-7, -3]$

For each problem, find the average value of the function over the given interval. Then, find the values of *c* that satisfy the Mean Value Theorem for Integrals.

9) $f(x) = 2x^{\frac{1}{2}}$; $[0, 1]$

10) $f(x) = 3(x+3)^{\frac{1}{2}}$; $[-3, -2]$

11) $f(x) = -2x^2 - 4x + 2$; $[-3, 1]$

12) $f(x) = 2x$; $[-1, 3]$