Calculus Name_____ ID: 1

Mean Value / Average Value Practice

Date_____ Period____

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

1) $f(x) = x^2 + 6x + 8;\ [-5, -2]$

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

3) $f(x) = 2x + 1;\ [0, 3]$

4) $f(x) = -2x + 2;\ [0, 3]$

5) $f(x) = x;\ [0, 4]$

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

7) $f(x) = 2x - 2;\ [1, 4]$

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

9) $f(x) = -x - 2;\ [-2, 3]$

10) $f(x) = 2x + 2;\ [-3, 2]$

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

11) $f(x) = 2x^2 + 8x + 5;\ [-4, -1]$

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

13) $f(x) = x^2 - 2x + 3;\ [0, 3]$

14) $f(x) = x - 1;\ [0, 4]$

15) $f(x) = x + 2;\ [0, 3]$

16) $f(x) = x - 1;\ [-1, 3]$

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

1) $f(x) = x^2 + 6x + 8;\ [-5, -2]$

0

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

3

3) $f(x) = 2x + 1;\ [0, 3]$

4

4) $f(x) = -2x + 2;\ [0, 3]$

−1

5) $f(x) = x;\ [0, 4]$

2

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

−2

7) $f(x) = 2x - 2;\ [1, 4]$

3

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

−2

9) $f(x) = -x - 2;\ [-2, 3]$

$-\frac{5}{2} = -2.5$

10) $f(x) = 2x + 2;\ [-3, 2]$

1

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

11) $f(x) = 2x^2 + 8x + 5;\ [-4, -1]$

$-3, -1$

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

$\frac{1}{2} = 0.5$

13) $f(x) = x^2 - 2x + 3;\ [0, 3]$

0, 2

14) $f(x) = x - 1;\ [0, 4]$

2

15) $f(x) = x + 2;\ [0, 3]$

$\frac{3}{2} = 1.5$

16) $f(x) = x - 1;\ [-1, 3]$

1