8.1 Average Value of a Function

Calculus   Name: _____

Find the average value of each function on the given interval.

1. $f(x) = x^2 - 2x$ on $[0, 3]$	2. $f(x) = \frac{1}{x}$ on $[1, 5]$	3. $f(x) = 2e^x$ on $[-3, 1]$

On the given interval, find the x-value where the function is equivalent to the average value on that interval.

4. $f(x) = 2x + 8$ on $[-5, -2]$	5. $f(x) = 5 - 3x^2$ on $[1, 3]$

Find the average rate of change on the given interval.

6. $y = \ln \sqrt{x}$ on $[1, e]$

7. $y = x^2 + 3x - 2$ on $[-2, 1]$

Find where the instantaneous rate of change is equivalent to the average rate of change.

8. $y = -x^2 + 5x + 2$ on $[-1, 1]$

9. $y = \sqrt{2x + 3}$ on $\left[\frac{1}{2}, 3\right]$