Calculus   Name_____
Area by Rectangular Approximation Method   Date_____ Period_____

For each problem, approximate the area under the curve over the given interval using 3 left endpoint rectangles.

1) $y = -x^2 - 2x + 11;\ [-3, 0]$

2) $y = -\dfrac{3}{x};\ [-\dfrac{7}{2}, -2]$

For each problem, approximate the area under the curve over the given interval using 4 left endpoint rectangles.

3) $y = -\dfrac{5}{x};\ [-4, -2]$

4) $y = -\dfrac{x^2}{2} + x + 5;\ [-2, 2]$

For each problem, approximate the area under the curve over the given interval using 3 right endpoint rectangles.

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

6) $y = -x^2 + 13;\ [-\dfrac{5}{2}, -1]$

For each problem, approximate the area under the curve over the given interval using 5 right endpoint rectangles.

7) $y = x^2 - 2x + 3;\ [-\dfrac{3}{2}, 1]$

8) $y = -\dfrac{x^2}{2} + 6;\ [-\dfrac{5}{2}, 0]$

For each problem, approximate the area under the curve over the given interval using 4 midpoint rectangles.

9) $y = \dfrac{x^2}{2} + x + 1; \ [-5, -3]$

10) $y = x^2 + 2x + 4; \ [-4, -2]$

For each problem, approximate the area under the curve over the given interval using 5 midpoint rectangles.

11) $y = \dfrac{4}{x}; \ [2, \dfrac{9}{2}]$

12) $y = \dfrac{x^2}{2} - x + 2; \ [-\dfrac{1}{2}, 2]$

For each problem, approximate the area under the curve over the given interval using 4 inscribed rectangles.

13) $y = -x^2 - 2x + 11; \ [-2, 2]$

14) $y = \dfrac{3}{x}; \ [1, 3]$

For each problem, approximate the area under the curve over the given interval using 4 circumscribed rectangles.

15) $y = x^2 + 2x + 4; \ [-3, -1]$

16) $y = -\dfrac{4}{x}; \ [-6, -2]$