SATPREP

Name_____

Assignment : Riemann Sums

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

1) $y = -\dfrac{x}{2} + 4;\ [-7, 1]$

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

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

4) $y = x + 5;\ [-3, 1]$

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

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

6) $y = \dfrac{x^2}{2} - x + 1;\ [-1, 4]$

7) $y = -\dfrac{x^2}{2} - x + 5$; $[-4, 1]$

8) $y = -x^2 - 2x + 10$; $[-4, 1]$

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

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

10) $y = \dfrac{2}{x}$; $[2, 5]$

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

11) $y = \dfrac{x}{2} + 4$; $[-1, 3]$

12) $y = -\dfrac{4}{x}$; $[-5, -1]$

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

13) $y = -\dfrac{x}{2} + 4$; $[-7, 1]$

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

15) $y = \dfrac{x}{2} + 3$; $[-2, 6]$

16) $y = \dfrac{5}{x}$; $[1, 5]$

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

17) $y = -x + 3$; $[-5, 0]$

18) $y = x^2 + 3$; $[-2, 3]$

19) $y = -\dfrac{3}{x}$; $[-6, -1]$

20) $y = \dfrac{5}{x}$; $[2, 7]$

Answers to Riemann Sums and Rectanglular Approximation Methods

1) 48

2) 11

3) 17

4) 14

5) 15

6) 10

7) $\dfrac{45}{2} = 22.5$

8) 45

9) $\dfrac{286}{105} \approx 2.724$

10) $\dfrac{572}{315} \approx 1.816$

11) 18

12) $\dfrac{1984}{315} \approx 6.298$

13) 48

14) 27

15) 36

16) $\dfrac{125}{12} \approx 10.417$

17) 25

18) 21

19) $\dfrac{87}{20} = 4.35$

20) $\dfrac{153}{28} \approx 5.464$