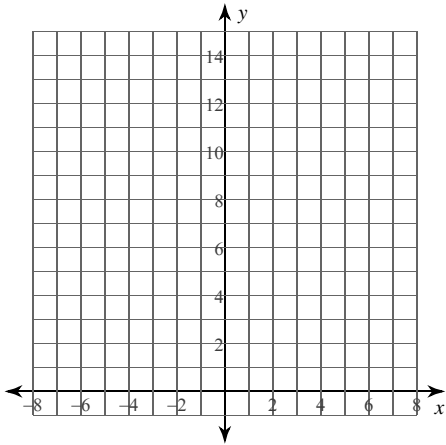


## Calculus Practice: Riemann Sums 3a

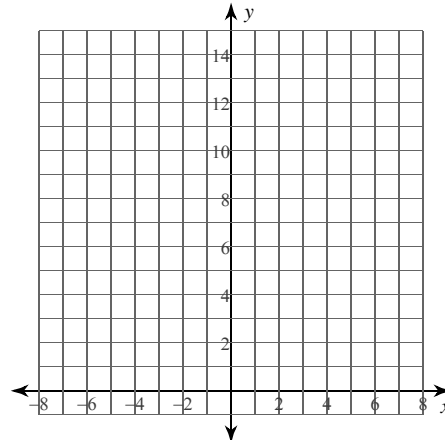
For each problem, approximate the area under the curve over the given interval using 4 midpoint rectangles. You may use the provided graph to sketch the curve and rectangles.

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



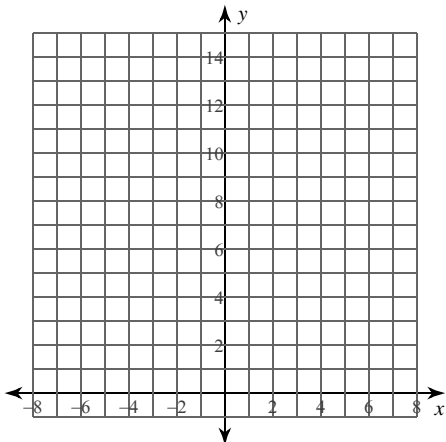
- A)  $\frac{13}{2} = 6.5$       B) 18  
C) 6                      D) 5

2)  $y = x + 6$ ;  $[-3, 1]$



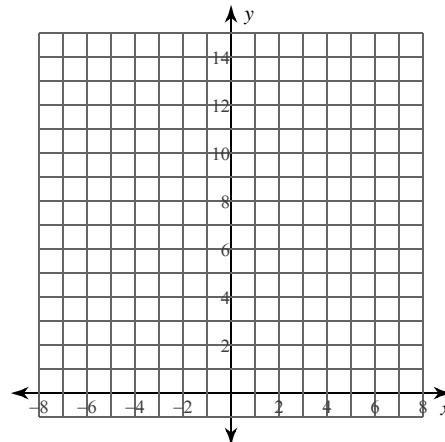
- A) 20      B)  $\frac{39}{2} = 19.5$   
C) 60      D) 21

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



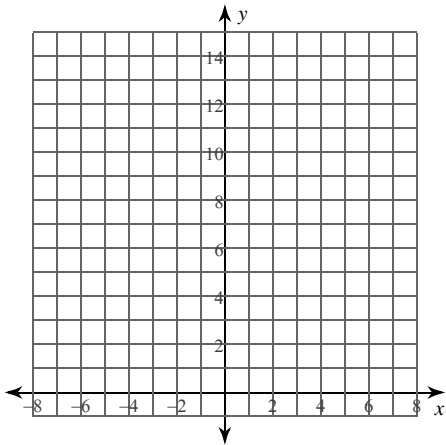
- A)  $\frac{521}{24} \approx 21.708$   
B)  $\frac{163}{8} = 20.375$   
C)  $\frac{179}{8} = 22.375$   
D)  $\frac{171}{8} = 21.375$

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



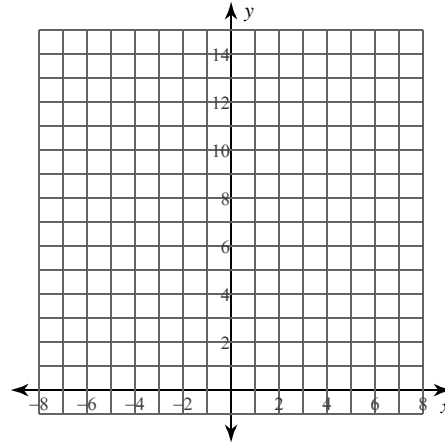
- A)  $\frac{133}{4} = 33.25$   
B)  $\frac{133}{8} = 16.625$   
C)  $\frac{141}{8} = 17.625$   
D)  $\frac{407}{24} \approx 16.958$

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



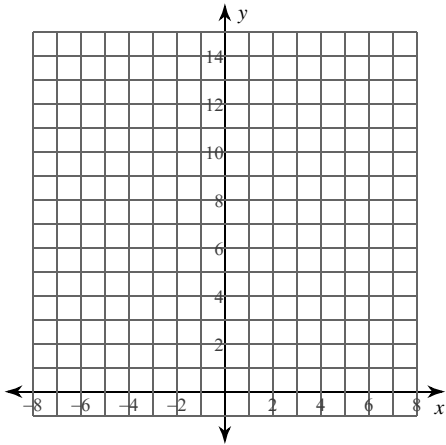
- A)  $\frac{85}{8} = 10.625$
- B)  $\frac{101}{8} = 12.625$
- C)  $\frac{85}{4} = 21.25$
- D)  $\frac{89}{8} = 11.125$

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



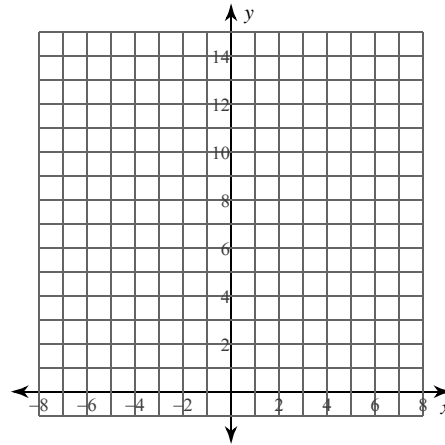
- A)  $\frac{4283}{630} \approx 6.798$
- B)  $\frac{2614}{315} \approx 8.298$
- C)  $\frac{3968}{315} \approx 12.597$
- D)  $\frac{1984}{315} \approx 6.298$

7)  $y = \frac{1}{x}$ ;  $[1, 3]$



- A)  $\frac{3776}{3465} \approx 1.09$
- B)  $\frac{4087}{6930} \approx 0.59$
- C)  $\frac{11017}{6930} \approx 1.59$
- D)  $\frac{3154}{3465} \approx 0.91$

8)  $y = -\frac{2}{x}$ ;  $[-4, -2]$

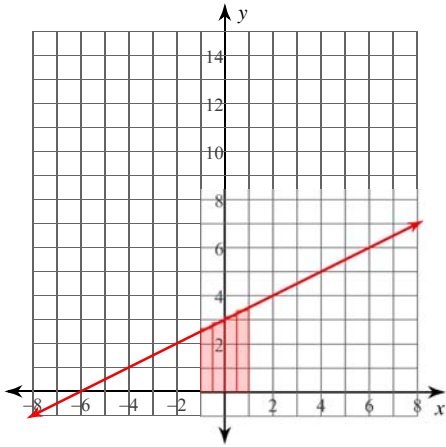


- A)  $\frac{6751}{6435} \approx 1.049$
- B)  $\frac{17792}{6435} \approx 2.765$
- C)  $\frac{11357}{12870} \approx 0.882$
- D)  $\frac{8896}{6435} \approx 1.382$

### Calculus Practice: Riemann Sums 3a

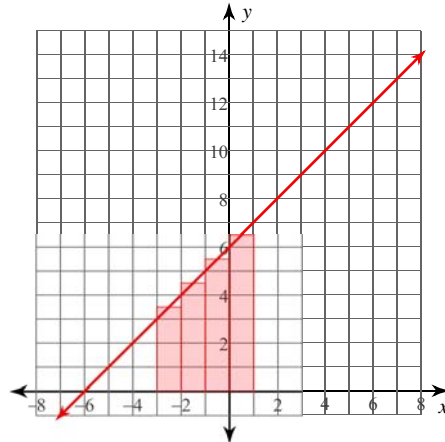
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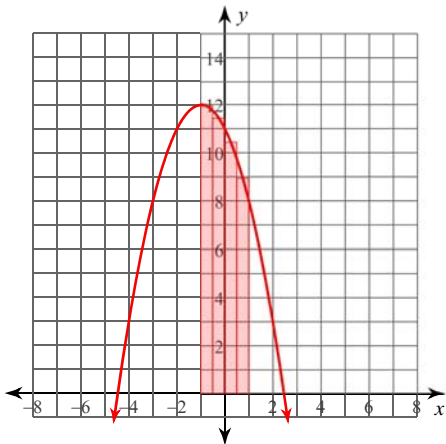
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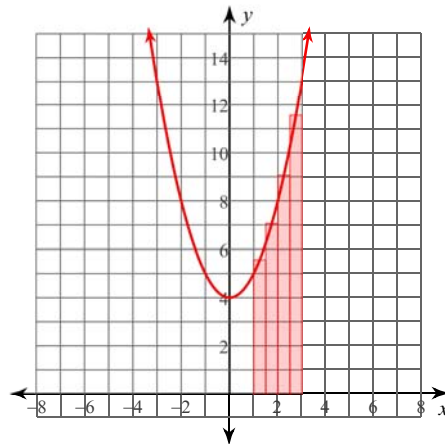
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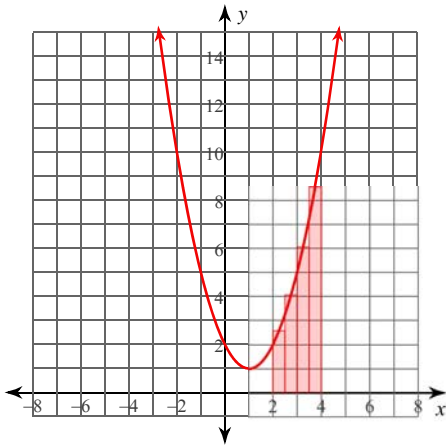
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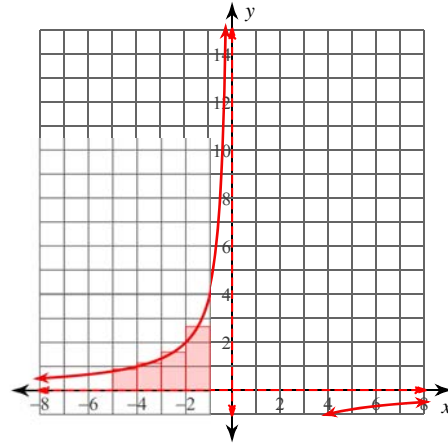
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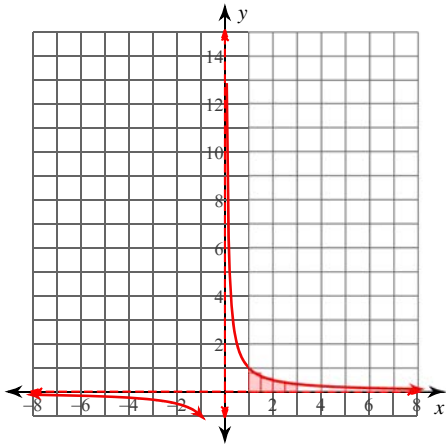
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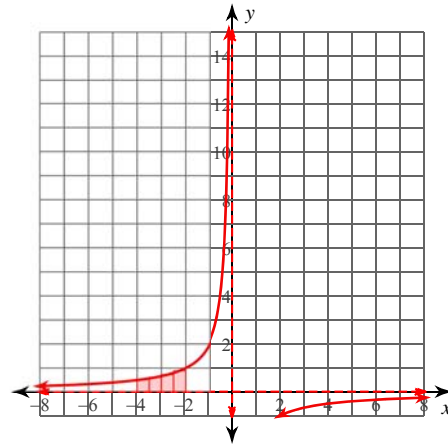
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