

Section 5.3 Area and the definite integral. (Minimum Homework: 1, 3, 5, 7)

#1-8: Create rectangles (using right endpoints) to estimate the area between the curve and the x-axis.

Specifically:

- a) Use your calculator to create a graph of the function and make a copy of the graph to write on.
- b) Determine the width of each rectangle that will be used to estimate the area.
(Each rectangle will have a width; $\frac{b-a}{n}$)
- c) Increment by the interval width and draw rectangles on your graph.
- d) Find the area of each rectangle. (Let the height of the rectangle be the function value at the right endpoint of the rectangle.)
- e) Add the individual areas to get an estimate of the area under the curve.

(Round the y-coordinates to 2-decimal places when appropriate.)

- 1) $f(x) = x^2 + 2$; from $a = 1$ to $b = 5$ using 2 rectangles
- 2) $f(x) = x^2 + 1$; from $a = 2$ to $b = 6$ using 2 rectangles
- 3) $f(x) = x^2 + 2$; from $a = 1$ to $b = 5$ using 4 rectangles
- 4) $f(x) = x^2 + 1$; from $a = 2$ to $b = 6$ using 4 rectangles
- 5) $f(x) = 12 - x^2$; from $a = 0$ to $b = 3$ using 3 rectangles
- 6) $f(x) = 10 - x^2$; from $a = 0$ to $b = 3$ using 3 rectangles
- 7) $f(x) = 12 - x^2$; from $a = -1$ to $b = 2$ using 3 rectangles
- 8) $f(x) = 10 - x^2$; from $a = -1$ to $b = 2$ using 3 rectangles