

# SUPER SECRET NUMBER PUZZLE

## Working with Riemann Sums and the Trapezoidal Rule

Find the exact answer to each question. (Do not round.)

Write your answer in the answer blank to the left.

Add up all of your answers.

Check to see if your number matches the super secret number!

- \_\_\_\_\_
1. Find the approximation of the area between the curve  $y = x^2$  and the x-axis over the interval  $[1, 4]$ . Use three equally sized left hand rectangles.

- \_\_\_\_\_
2. Find the approximation of the area between the curve  $y = x^3 + 1$  and the x-axis over the interval  $[0, 2]$ . Use four equally sized right hand rectangles.

- \_\_\_\_\_
3. The function  $f(x)$  is continuous on the closed interval  $[2, 8]$  and has values given in the table below. Using three equal subintervals, what is the trapezoidal approximation of the area between the curve and the x-axis?

x	2	3	4	5	6	7	8
f(x)	8	10	15	20	27	39	52

- \_\_\_\_\_
4. Using the same table as above, find an approximation of the area between the x-axis and the curve. Use three equally sized midpoint rectangles.

- \_\_\_\_\_
5. True or False. A left hand rectangular approximation will always provide an approximation of the area that is less than the actual area. (Answer 1 for True or 2 for False.)

- \_\_\_\_\_
6. Find the approximation of the area between the curve  $y = x^3 - 2x + 3$  and the x-axis over the interval  $[-1, 1]$ . Use four equally sized left hand rectangles.

THE SUPER SECRET NUMBER IS \_\_\_\_\_



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NUMBER IS...

