

**MTH 1126 Test #2 - Part 2 9am Class**  
SPRING 2022

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Name \_\_\_\_\_

**Instructions.** Show CLEARLY how you arrive at your answers.

1. Compute the length of the arc of the graph of the function  $f(x) = \frac{2}{3}x^{\frac{3}{2}} + \frac{1}{2}$  from the point  $(3, f(3))$  to the point  $(8, f(8))$ .

2. Compute the volume of the solid of revolution generated by revolving the bounded region described below about the line  $x = -1$ . (Use the “Shell Method.”)

The region bounded by: the  $y$ -axis, the graph  $y = x^3$ , and the line  $y = 8$

Use the “five step method” (partition the interval, sketch the  $i^{\text{th}}$  rectangle, form the sum, take the limit)

Extra Wow! (5 points!)

Compute the length of the arc of the graph of the function  $f(x) = x^3 + \frac{1}{12}x^{-1}$  from the point  $(1, \frac{13}{12})$  to the point  $(2, \frac{973}{36})$ .