

Please PRINT your name _____

No calculators, cell phones, computers, notes, etc.

Circle your answer. Make your work **correct, complete** and **coherent**.

The quiz is worth 5 points. The solutions will be posted on my website later today.

Quiz 20, November 18, 2019

Find the length of the curve $y = \frac{2}{3}x^{3/2}$ for $0 \leq x \leq 8$.

ANSWER: The curve is parameterized by $\vec{r}(t) = t\vec{i} + \frac{2}{3}t^{3/2}$ for $0 \leq t \leq 8$. The length of the curve is

$$\int_0^8 |\vec{r}'(t)| dt = \int_0^8 |\vec{i} + t^{1/2}\vec{j}| dt = \int_0^8 \sqrt{1+t} dt = \frac{2}{3}(1+t)^{3/2} \Big|_0^8 = \boxed{\frac{2}{3}(27-1)}.$$