

Name: _____

Write all of your responses on this quiz paper, use the back if necessary. Show all your work, answers without supporting justification will not receive credit. Each exercise is worth 20 points.

1. Find the following integral. Keep your answer in exact form.

$$\int_0^2 (2x - 3)(4x^2 + 1) \, dx$$

2. Find the following integral.

$$\int \frac{\cos(x)}{1 + \sin(x)} dx$$

3. Find the following integral.

$$\int \frac{1+x}{1+x^2} dx$$

4. Find the following integral.

$$\int x e^{2x} dx$$

5. Find the volume of the solid obtained by rotating the region bounded by $y = x^3$, $y = 0$, and $x = 1$ about the x -axis. Keep your answer in exact form.

