Math 182 Honors Quiz 5 Version A

1. Find the arc length of the curve $y = x^2$ from x = 0 to x = 2.

2. A birdbath 5 in deep has the shape of a segment of a sphere of diameter 24 in. It contains a decorative lead cannonball of diameter 6 in. If the birdbath is filled with water to a depth of x inches, how much water does it contain.

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3. Find the area of the surface of revolution generated by revolving the arc $y = x^2$ from $0 \le x \le 2$ about the *y*-axis.

4. The region bounded by $y = \frac{x}{\sqrt{x^3 + 8}}$, the x-axis and the line x = 2 is revolved about the y-axis. Find the volume of the solid generated in this way.