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 $0 \leq x \leq 2$ 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.

