

Math 182 Honors Quiz 4 Version A

1. $\frac{d}{dx} \ln(\cos^2 x + 1)$

2. A birdbath 5 in deep has the shape of a segment of a sphere of diameter 25 in. It contains a decorative lead cannonball of diameter 7 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. $\int_0^1 \frac{x}{e^{x^2}} dx$

4. Find the area of the surface of revolution made by revolving the arc $y = \frac{1}{3}\sqrt{x}(3-x)$ from $0 \leq x \leq 3$ around the x -axis.