MATH 229 §11 QUIZ 7 (Takehome) NAME _____
Prof. J. Beachy Due Monday, 11/27/2006 ___ /20

1. (5 pts) Find the antiderivative of $g(x) = \dfrac{3x^4 + 2x^7}{\sqrt{x}}$.

2. (5 pts) $\displaystyle\int_1^8 \sqrt[3]{x}\, dx =$

3. (5 pts) Use Newton's method on your calculator to solve the equation $\dfrac{34\pi}{100} = \theta - \dfrac{1}{2}\sin\theta$. Start with $\theta = 1.5$ radians as the first approximation. List your successive approximations until you get agreement to 5 decimal places.

4. (5 pts) Show that using Newton's method to solve the equation $x = \sqrt[k]{a}$ leads to the formula

$$x_{n+1} = \frac{(k-1)}{k} \cdot x_n + \frac{1}{k} \cdot \frac{a}{x^{k-1}} \ .$$

Use the function $f(x) = x^k - a$. Note that this generalizes the formula we got for finding square roots.