

Sample Questions for Quiz 2

1. Find the derivative of $f(x) = \cos x$.
2. Find the derivative of $y = \tan 2x$.
3. Find the derivative of $g(x) = \sin^5 x$.
4. Consider the function $f(x) = x^4 + x^2$. Find and classify any critical points of $f(x)$.
5. Describe the motion (including giving its direction) of a particle whose position at time t is given by $x = 3 \cos t$ and $y = 3 \sin t$.
6. Find the indefinite integral $\int x^6 dx$.
7. Find the indefinite integral $\int \frac{1}{t} dt$.
8. Evaluate the definite integral $\int_0^{\pi/2} \cos \theta d\theta$.
9. Find the indefinite integral $\int x^3 \sqrt{x^4 + 6} dx$.
10. Evaluate the definite integral $\int_0^1 x e^{x^2+1} dx$.