

Class prep quiz on section 4.9, Stewart's Calculus (8th ed.)

1. Which of the following is **not** a correct statement about antiderivatives?

- (a) One antiderivative of $\cos(2x)$ is $\sin(2x)$.
- (b) One antiderivative of e^x is e^x .
- (c) One antiderivative of $\sin x$ is $-\cos x$.
- (d) One antiderivative of $\frac{1}{x}$ is $\ln|x|$.

2. Which of the following is the **most general** antiderivative of $2 \sin x \cos x$?

- (a) $-\cos^2 x$ (b) $-\frac{\cos 2x}{2}$ (c) $\sin^2 x$
- (d) None of the above

3. What is the most general antiderivative of $8x^3 - 3x^{-1} + 5 \cos x$?

- (a) $2x^4 - 3 \ln|x| + 5 \sin x + C$ (b) $2x^4 - 3 \ln|x| - 5 \sin x + C$
- (c) $2x^4 - 3 + 5 \sin x + C$ (d) $2x^4 - 3 - 5 \sin x + C$

4. What is the function $f(x)$ such that $f''(x) = 7x^3 + e^x$, $f(0) = 11$, and $f'(0) = -3$?

- (a) $f(x) = \frac{7x^5}{20} + e^x$
- (b) $f(x) = \frac{7x^5}{20} + e^x - 4x + 10$
- (c) $f(x) = \frac{7x^5}{20} + e^x - 3x + 11$
- (d) $f(x) = \frac{7x^5}{20} + e^x + 10$