Directions: Show all your work.
Quiz total: 25 points.

Find the indicated antiderivatives. Be sure to show your work.

1. \( \int \frac{3}{e^{7x}} \, dx = \frac{-3}{7} e^{-7x} + C \)

2. \( \int \frac{x}{\sqrt{1+x^2}} \, dx = \sqrt{1+x^2} + C \)

3. \( \int \sin^4(x) \cos(x) \, dx = \frac{1}{5} \sin^5(x) + C \)

4. \( \int 17x^3 \sin(x^4) \, dx = -\frac{17}{4} \cos(x^4) + C \)

5. \( \int \frac{\sec^2\left(\frac{1}{x}\right)}{x^2} \, dx = -\tan\left(\frac{1}{x}\right) + C \)