

Quiz 7

Name: _____

1. Compute the following integrals.

(a) $\int \frac{3+x^2}{x} dx$

(c) $\int x^{-4/7} dx$

(b) $\int \cos\left(\frac{1}{2}x\right) dx$

(a): the function is the same as $\frac{3}{x} + x$, whose integral is $3 \ln|x| + \frac{1}{2}x^2 + C$.

(b) educated guessing: you know the antiderivative of \cos is \sin , and to get the correct numerical factor you guess and check. The answer is $2 \sin\left(\frac{1}{2}x\right) + C$.

(c) Reverse power rule it: $-\frac{4}{7} + 1 = \frac{3}{7}$, so the antiderivative is $\frac{7}{3}x^{3/7} + C$.