

Name: _____

Please take your time and answer each question clearly and carefully. For this quiz, you will not need a calculator. Do not use one.

1. Find the anti-derivative of each of the following functions. Be sure to carefully apply the appropriate rules for products, exponents, powers, etc. Your answer must include the unknown constant of integration, $+C$.

(a) If $p(t) = 600e^{6t}$ and $P'(t) = p(t)$, what is $P(t)$?

(b) If $f(q) = 2q + 1$ and $F'(q) = f(q)$, what is $F(q)$?

(c) If $g(x) = \sin(x) + x^{-1}$ and $G'(x) = g(x)$, what is $G(x)$?

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2. (a) Consider the area under the curve $f(q) = 2q + 1$ from $q = 2$ to $q = 4$. Write this using “integral notation” (including the \int sign, etc.).

(b) Find this area using integration. You may refer to your answer to 1(b).