MA 126 — Spring 2017 — Prof. Clontz — Readiness Quizzes

- Which of these is a definition of a^x for all positive numbers a and all real numbers x? (2017-01-11, 1.1, practice)
  - A. $\ln(x \cdot e^a)$
  - B. a multiplied by itself x times
  - C. the unique function for which $\frac{d}{dx}[a^x] = a^x$
  - D. $\exp(x \ln a)$
- Which of these statements is false? (2017-01-11, 1.1, practice)
  - A. $\ln(abc) = \ln(a) + \ln(b) + \ln(c)$
  - B. $\frac{d}{dx}[\ln x] = \frac{1}{|x|}$ for all nonzero numbers x
  - C. $y = \exp(x)$ if and only if $x = \ln(y)$
  - D. $e^x = \exp(x)$

1. The Substitution Rule is the opposite of which derivative rule? (2017-01-19, 2.1)

   A. Chain Rule

   B. Product Rule

   C. Quotient Rule

   D. Power Rule

2. What is incorrect about the following attempt at using the Substitution Rule?

$$\int_0^1 (3-2x)^5\,dx = \int_0^1 u^5\left(-\frac{1}{2}du\right)$$

   (2017-01-19, 2.1)

   A. dx should have been replaced with $+\frac{1}{2}\,du$.

   B. u shouldn't be raised to the 5th power.

   C. dx should have been replaced with $-2\,du$.

   D. The bounds are incorrect.

3. Which of these formulas would be most useful in finding $\int \sin^4\theta\cos^2\theta\,d\theta$? (2017-01-25, 2.2)

   A. $\sin^2(\theta) = \frac{1}{2} + \frac{1}{2}\sin(2\theta)$

   B. $\cos^2(\theta) = \frac{1}{2} + \frac{1}{2}\cos(2\theta)$

   C. $\cos^2(\theta) = 1 - \sin^2(\theta)$

   D. $\sin^2(\theta) = 1 - \cos^2(\theta)$

4. Which of these formulas would be most useful in finding $\int \sec^4(\theta)\,d\theta$? (2017-01-25, 2.2)

   A. $\sec^2(\theta) = 1 + \tan^2(\theta)$

   B. $\sec^2(\theta) = 1 - \tan^2(\theta)$

   C. $\tan^2(\theta) = 1 + \sec^2(\theta)$

   D. $\tan^2(\theta) = 1 - \sec^2(\theta)$