1. If xa · (xa+1)a · (xa )1-a = xk , then k = (A) 2a + 1 (B) a + a2 (C) 3a (D) 3a + 1 (E) a3 + a

2. If log8 3 = x · log2 3, then x = (A) 1/3 (B) 3 (C) 4 (D) log4 3 (E) log8 9

3. If log10 m = 1/2 , then log10 10m2 = (A) 2 (B) 2.5 (C) 3 (D) 10.25 (E) 100

4. If logb 5 = a, logb 2.5 = c, and 5x = 2.5, then x = (A) ac (B) c/a (C) a + c (D) c – a (E) The value of x cannot be determined from the information given.

5. If f (x) = log2 x, then f(2/x) + f(x) = (A) log(2/x) + log2 x (B) 1 (C) (D) (E) 0

6. If ln (xy) < 0, which of the following must be true? (A) xy < 0 (B) xy < 1 (C) xy > 1 (D) xy > 0 (E) none of the above

7. and , = (A) 1 (B) 2 (C) 96 (D) 98 (E) 103

8. = (A) 1.2 (B) 1.1 (C) 0.9 (D) 0.8 (E) – 0.7

9. (A) 1.9 (B) 2.0 (C) 2.1 (D) 2.3 (E) 2.5

10. If $300 is invested at 3%, compounded continuously, how long (to the nearest year) will it take for the money to double? (If P is the amount invested, the formula for the amount, A, that is available after t years is .) (A) 26 (B) 25 (C) 24 (D) 23 (E) 22