7.3 Corrective Assignment

Solve, rounding to three significant digits.

1. $8^{-x} = 0.654$

2. $10^{x-4} = 92$

3. $e^{x} = 8.88$

4. $15e^{2x-1} = 272$

5. $log_8 x = 2$

6. $e^{0.045x} + 105 = 240$

7. $log\ x + log\ 10 = 2$

8. $log\ (x+4) + log\ (x) = 1$ *check for extraneous solutions!*

9. $\log(15 - 2x) = \log(3x - 20)$

10. $5 - \log(x+2) = 7$

11. $5^{x+1} = 17$

7.3 Corrective Assignment

12. A Brust-Wurst is boiled at 98^oC and then placed in 16^oC water to cool. Five minutes later the temperature of the Brust-Wurst is 35^oC. Use Newton's Law of Cooling to find k.

Now, use *k* to find the *time* when $T = 22^0 C$.

13. How many years will it take for carbon-14 to diminish to 3% of its original amount after the death of a plant or animal?

14. At what rate compounded quarterly will $1000 have to be invested to amount to $2500 in 10 years?

15. A medical researcher is testing a radioactive isotope for use in a new imaging process. She finds that an original sample of 5 grams decays to 1 gram in 6 hours. Find the half-life of the sample to three significant digits. (Use half-life formula.)

ANSWERS:

1. x = 0.204 2. x =5.964 3. x = 2.184 4. x = 1.949 5. x =64.000 6. x =109.006 7. x =10.000
8. Both x = 0 and x = -4 are extraneous. Therefore, no solution. 9. x = 7.000 10. x = -1.990 11. x = .386
12. k = 0.292456; time = 8.941 min 13. 28,278.698 years 14. r = 9.269% 15. 0.035068 hours or 2.1 min