

Homework 2

E 250 – ELECTRIC CIRCUITS

Due in Class, Week 3

1. Read Chapters 1, 2, 3, & 4 of Terrell text.
2. Problem 1.3.1 (p. 33) – Express with proper abbreviation & symbol.
3. Problem 1.3.3 (p. 33) – Convert to engineering notation.
4. Problem 1.4.1 (p. 36) – Write with standard prefix.
5. Problem 2.5.1 (p. 57) – Given energy & time, compute power.
6. Problem 2.5.3 (p. 57) – Convert HP to Watts.
7. Problem 2.6.1 (p. 64) – Find I given R and V.
8. Problem 2.6.7 (p. 65) – Find P given R and V.
9. Problem 2.7.5 (p. 78) – Determine if R value is w/in tolerance.
10. Problem 4.3.3 (p. 149) – Use KVL to determine V_3 .
11. Problem 4.4.2 (p. 160) – Find R_{tot} given 3 R's in series.
12. Problem 4.5.2 (p. 165) – Relative voltage.
13. Problem 4.6.2 (p. 170) – Multiple voltage sources
14. Problem 4.7.1 (p. 175) – Voltage dividers
15. Compute current flowing thru an element if the charge flow is given by:
 - a) $q(t) = (3t + 8) \text{ mC}$
 - b) $q(t) = (8t^2 + 4t - 2) \text{ C}$
16. Find the charge $q(t)$ flowing thru a device if the current is
 - a) $i(t) = 3\text{A}$, $q(0) = 1\text{C}$
 - b) $i(t) = (2t + 5) \text{ mA}$, $q(0) = 0$
17. A current of 3.2 A flows thru a conductor. How much charge passes thru a given cross-section of the conductor in 20 seconds?