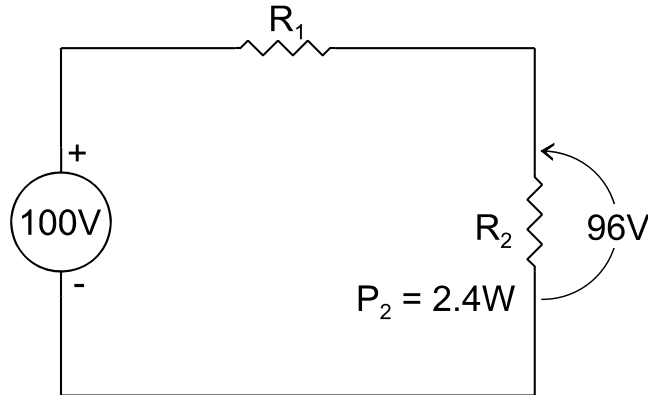


ELECTROTECHNOLOGY
ELTK1100
ASSIGNMENT #7

1. Calculate the unknown resistor values. What percentage of the source voltage is lost to R_1 .



2. The distance between a load and a source is 100 ft. The total resistance of the conductor cannot exceed 0.37Ω . What wire gage should be selected.
3. Calculate the percentage voltage drop on a 500 ft #2 copper feeder supplying a load of 100A from a source of 220V. What would be the resistance of the conductor at 70°C ?
4. A generator is located 600 ft away from its load. The load consists of three 2.5hp motors, five 2.5 kW heaters and twenty-five 200W fluorescent lights. If the load voltage is 220V and maximum allowable voltage drop in the feeder is 8%, find:
- (a) required generator voltage
 - (b) required wire size
 - (c) the power losses in this feeder.
5. A 25hp motor is supplied from a 240V source through 400 ft copper feeder. It is desired to limit the voltage drop on the feeders to 2%. Determine;
- (a) the size of conductors for this feeder.
 - (b) the power losses in this feeder.
6. A 600V generator is 750 m from the following loads; six 3 hp motors. If the maximum allowable voltage drop in the feeder is 10%, calculate the minimum size wire gage required in the feeder.