Name:_____ Date:_____ Hour: 1 2 3 4 5 6

Transformers Worksheet

$$\frac{V_P}{V_S} = \frac{N_P}{N_S}$$

Directions: Solve each of the following problems using GUFSSA.

1. A step-down transformer has 2680 turns in its primary. When the voltage across the primary is 5850 V, the voltage across the secondary is 120 V. How many turn are in the secondary?
   55 turns

2. A step-up transformer used in an automobile has a voltage of 12 V across its primary and a voltage across its secondary of 2×10^4 V. If the number of turns across the primary is 21, what is the number of turns in the secondary? **3.5×10^4 turns**

3. A step-up transformer for electric power creates 119,340 V across the secondary. If the voltage across the primary is 117 V and the number of turns in the secondary is 25,500, what is the number of turns in the primary? **25 turns**

4. A step-down transformer has 525 turns in the secondary and 12,500 turns in its primary. If the voltage across the primary is 3510 V, what is the voltage across the secondary? **147 V**

5. A step-up transformer is used on a 120 V line. If the primary has 75 turns and the secondary has 1500 turns, what is the voltage across the secondary? **2400 V**

6. A transformer has 1400 turns on the primary and 140 turns on the secondary. What is the voltage across the primary if the secondary voltage is 6.9×10^3 V. **6.9×10^4 V**

7. An electric doorbell uses 12 V to operate. A transformer powered from a 120 V outlet has 500 turns. How many turns are in the secondary? **50 turns**

8. A model electric train requires 6 V operate. When connected to a 120 V outlet, a transformer is needed to step the voltage down. If the primary has 240 turns, how many turns are in the secondary?
   12 turns

9. A cell phone recharger has 1440 turns in its primary and 60 turns on its secondary. If the input voltage is 120 V, what is the output voltage? **5 V**

10. A battery recharger for a laptop computer steps down the outlet voltage of 120 V to recharge the battery. If the number of turns in the primary is 3120 and the number of turns in the secondary is 507, what is the voltage output of the recharger? **19.5 V**