Physics 12 Section 18-6
Electric Power

1. Power is the rate at which work is done or energy is used.

$$P = \frac{Energy}{Time}$$

$$P = \frac{E_p}{t}$$

$$P = \frac{QV}{t}$$

But

$$I = \frac{Q}{t}$$

So

$$P = IV$$

2. Ohm's Law $V = IR$ can be combined with $P = IV$ to produce two additional equations.

$$P = IV$$

$$P = IIR$$

$$P = I^2R$$

And

$$P = IV$$

$$P = \frac{VV}{R}$$

$$P = \frac{V^2}{R}$$

Do 23-25, 27-29, 33, 34, and 36 on page 552.