

### Question #65473

In The Friendship Contraction episode 1 of "The Big Bang Theory," Penny confirms with Sheldon and Leonard that the power has gone out. She had been concerned because last month she "sent the electric company a Starbucks gift card, an apology note," and a few pictures. If the cost of electricity was \$0.17 per kWh and the Starbucks gift card had a value of \$10 (and we don't consider the value of the pictures), for how many hours could Penny have left her TV on if the TV requires 50.0 watts of power?

Data:

$$c = 0.17 \frac{\$}{kWh};$$

$$G = 10\$;$$

$$P = 50W;$$

$$T = ?$$

Solution:

$$G = c * A = c * P * T; \quad T = \frac{G}{c * P}; \quad [T] = \text{hours}$$

$$T = \frac{10}{50 * 0.17 * 10^{-3}} = 1.176 * 10^3 \text{ hours} = 49 \text{ days}$$

Answer: **49 days**

Answer provided by <https://www.AssignmentExpert.com>