Answer on Question #49195, Physics, Mechanics | Kinematics | Dynamics

What is the cost to operate a 100 W lamp continuously for 1 week when the power utility rate is 20 cents/kWh?

Solution.

A lamp whose power is 100 W has been operated for

$$1 \text{ week } = 7 \text{ days } * 24 \text{ hours } = 168 \text{ hours}$$

For the light power 1000 W during 1 hour we have to pay 20 cents = 0.2\$

So for lamp's working week we pay:

$$P_{week} = \frac{0.2 \text{ \$}}{1000 \, W \cdot 1 \, h} \cdot 100 \, W \cdot 168 \, h = 3.36\$$$

Answer: 3.36\$