 NESA exemplar question solutions

M7 Rates and Ratios

The majority of the exemplar questions are of an investigative manner. Below are the solutions for the explicit questions from the NESA topic guidance related to rates and ratios.

1. Calculate the running costs for the following appliances:
2. A $200$-watt television set running for six hours if the average peak rate for domestic electricity is $\$0.15$/kWh

Solution:

Total electricity used $=200×6=1200$ watt-hours ($1.2$kWh)

Cost of electricity used $=1.2×\$0.15=\$0.18$

1. A $2400$-watt ($2.4$kW) fan heater for eight hours per day for 30 days. Assume electricity is charged at $\$0.18$/kWh

Solution:

Total electricity used $=2.4×8×30=576$kWh

Cost of electricity used $=576×\$0.18=\$103.68$

1. If it costs $15$ cents for $1$-kilowatt ($1000$ watts) for one hour, how much would it cost for a $2400$-watt heater to be on from $5$pm to $11$pm?

Solution:

$5$pm to $11$pm $=6$ hours

Total electricity used $=2400×6=14400$ watt-hours ($14.4$kWh)

Cost of electricity used $=14.4×\$0.15=\$2.16$