Name: Answers		Date:
Class:		

Baldivis Secondary College

Year 11 Essential Mathematics 2018

Mini-Test 1.6

Topic – Units of Energy – Practical Applications

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Weighting: 1%

Total Time:	15 minutes
Weighting:	1%
Equipment:	To be provided by the student: Pen, pencil, ruler,1 double sided A4 page of notes, scientific calculator

Full working out must be shown to get full marks. Attempt all questions.

Question 1 — 4 marks

Convert the following:

a) 5 kW to W

5×1000

$= 5000$ W

b) 2670 W to kW

$2670 \div 1000$

$= 2.67$ kW

c) 589 W to kW

$589 \div 1000$

$= 0.589$ kW

d) 4.23 kW to W

4.23×1000

$= 4230$ W

(1 mark for each correct Number)

Question 2 — 3 marks

Find the energy used by:

a) 850 W washing machine used for 2 hours

0.85×2

$= 1.7$ kWh

b) 100 W laptop used for 4 hours, 30 minutes

0.1×4.5

$= 0.45$ kWh

(1 mark each correct Number)

c) 350 W electric blanket used for 45 minutes

$0.35 \times \frac{3}{4} = 0.2625$ kWh.

Question 3 — 4 marks

While preparing breakfast, Terry used a 1520 W toaster for 12 minutes, a 2200 W kettle for 6 minutes, and a 300 W blender for 3 minutes.

a) Which appliance used the most energy? Support your answer with reasoning.

$1.52 \times \frac{12}{60} = 0.304$ kWh

$2.2 \times \frac{6}{60} = 0.22$ kWh

$0.3 \times \frac{3}{60} = 0.15$ kWh

the toaster used the most energy.

1 mark for each correct energy calculation
+
1 mark for a correct statement

Question 4 — 5 marks

a) Fill in the missing information on this power bill.

Supply period: 09 Feb 2018 - 12 Apr 2018	Previous meter reading	Current meter reading	Units imported (kWh)	Units exported (kWh)
Anytime usage	37002	37872	870	

New charges

Home Plan (A1) tariff Charge period: 09 Feb 2018 - 12 Apr 2018	Units	Unit of measure	Unit price (cents)	Amount
eConnect				
Residential Anytime consumption	870.0000	kWh	24.0673	209.39
Supply charge	63	days	86.2780	$54.36
Plus GST @ 10.00%				$26.38
Total new charges				$290.13

(1 mark each correct piece of information)

b) What is the average daily use of energy during the billing period?

$\frac{870}{63} = 13.8$ units

1 mark for finding the correct information
1 mark for correct calculation