Name: Answer Guide Teacher :		Date:_____
Baldivis Secondary College	**Year 11 Essentials** **Rates, Ratios and Time** ***Full working out MUST be shown to get full marks for each question.***	
Total Time:	55 minutes	
Weighting:	5%	
Equipment:	To be provided by the student: Pen, pencil, ruler, scientific calculator, 1 single sided page of A4 notes	

Question 1

4 marks

Simplify these ratios.

a. 30L : 60L

1 : 2 ✓✓ AWS

b. 25cm : 100m

1cm : 4m ✓✓ AWS ✓ units

(4)

c. 1.2KL : 3.6L

1200L : 3.6L

333.33L : 1L ✓✓ AWS

Question 2

A wood worker draws a scale diagram of plans to build a table. He uses the ratio of 1cm : 15cm for his diagram.

a. His drawing table length is 12cm. How long is his table in real life?

4 marks

12 × 15 = 180 cm

✓ ✓

(2)

b. His table height is 120cm tall. How big would the leg drawing be on the page?

120 ÷ 15 = 8cm on plans

✓ ✓

(2)

Question 3

Ben does a charity bike ride from Mandurah to Joondalup. The total distance he rides is 99.6km. He completes the ride in 3 hours.

a. Find the rate at which Ben rode his bike

$99.6 / 3 = 33.2 \text{ km/hr}$ ✓ ✓ (2)

b. If Ben continued at the same pace, how far could he ride in 4 hours and 30 minutes.

$4.5 \times 33.2 = 149.4 \text{km}$ ✓ ✓ (2)

c. Ben's girlfriend Hannah completed the ride in 2 hours and 30 minutes. What was her average speed in km/h?

$\frac{99.6}{2.5} = 39.84 \text{ km/hr}$ ✓ ✓ (2)

Question 4

A pitcher in baseball is 25 metres from home plate. The ball covers this distance in 1.39 seconds. Convert this to km/h.

$\frac{25 \text{m}}{1.39 \text{ sec}}$ [illegible] $= \frac{17.98 \text{m}}{1}$ ✓ $\times 60$ (m) $\times 60$ (H) $= \frac{1078}{\text{min}} = \frac{64728}{\text{hr}} = 64.73 \frac{\text{km}}{\text{hr}}$ ✓

Question 5

When travelling to Germany, European countries use the Euro currency. Using the exchange rate of $1 AUD being worth 0.67 Euros, and 1 Euro is worth $1.25 AUD find the following.

a. Mr Power is taking $7500 AUD across the Europe for his Germany holiday. How many Euros would he receive?

$7500 \times 0.67 = €5025$ (2)

b. Mr Power has 600 Euros left when returning to Australia, how much is this worth in Australian currency?

$600 \times 1.25 = 750$ (2)

Question 6 [5 marks: 1, 2, 2]

Convert into seconds

a) 45 minutes

2700

b) $8\frac{1}{3}$ minutes

500 sec

$8 \times 60 + 20$

c)1 hour 10 minutes

4200 Sec

$(60+10) \times 60 =$

Question 7 [5 marks: 2, 1, 2]

Convert into minutes

a) $3\frac{1}{2}$ hours

210m

b) 1440 seconds

24m

c) 5 hours 13 minutes

313 m

Question 8 [6 marks: 1, 1, 1, 2, 1]

A sightseeing bus tour of Perth has the following timetable below. The times in bold are PM.

Departure location	Bus 1	Bus 2	Bus 3	Bus 4	Bus 5	Bus 6
Swan Bells	8:15	8:45	9:15	9:45	10:15	10:45
Art Gallery	8:45	9:15	9:45	10:15	10:45	11:15
Museum	9:45	10:15	10:45	11:15	11:45	**12:15**
Burswood Park Heritage Walk	10:45	11:15	11:45	**12:15**	**12:45**	**1:15**
Perth Mint	11:30	**12:00**	**12:30**	**1:00**	**1:30**	**2:00**
Kings Park	**12:20**	**12:50**	**1:20**	**1:50**	**2:20**	**2:50**
Swan River	**2:00**	**2:30**	**3:00**	**3:30**	**4:00**	**4:30**
Synergy Parklands	**3:00**	**3:30**	**4:00**	**4:30**	**5:00**	**5:30**
Swan Bells	**5:00**	**5:30**	**6:00**	**6:30**	**7:00**	**7:30**

a) How many bus services are available each day?

6 ✓

b) What is the latest departure time?

10:45 am ✓

c) What is the earliest arrival time back at the Swan Bells?

5:00 ✓

d) How long does it take to get from:

i) Burswood Park Heritage Walk to the Perth Mint

~~1hr~~ 45 min ✓

ii) Kings Park to Swan River

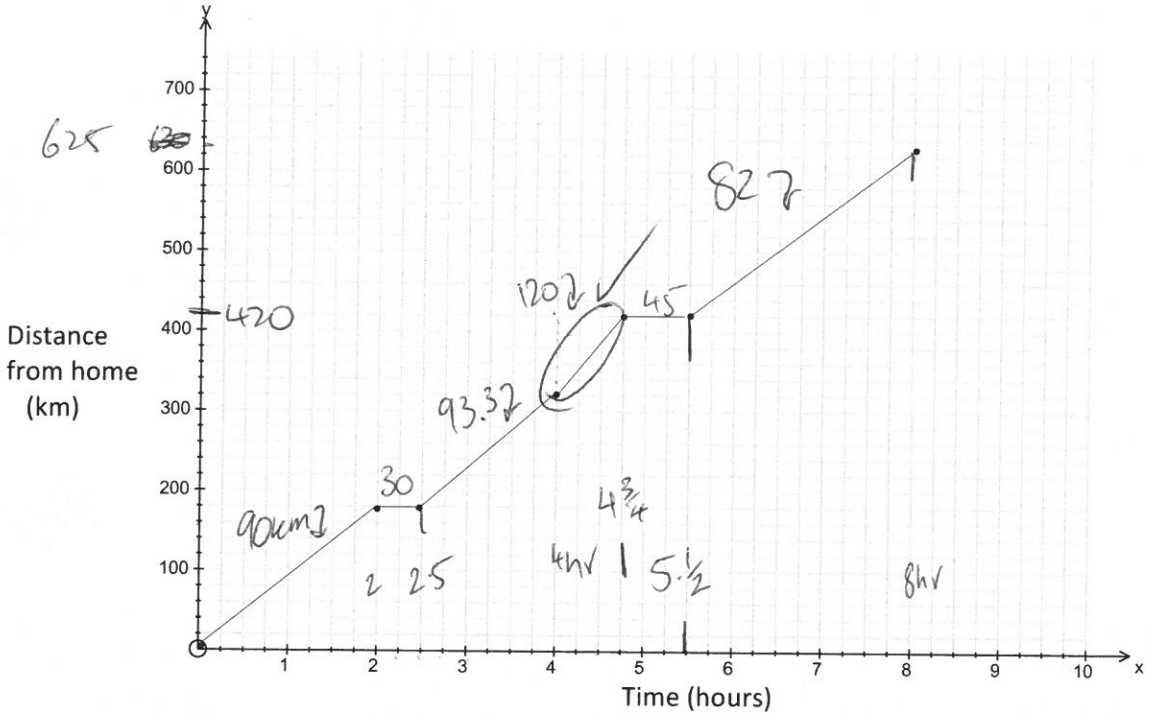
1hr 20 ✓

e) How long does the complete tour last?

8hr 15 min ✓

Question 4 [8 marks: 1, 1, 2, 2, 2]

A family is going on a trip 625km from their home. Their journey is shown below.



a) How long did the trip take in total (include the rest stops along the way)?

8 hrs

b) Approximately how long did they stop for along the way?

1hr 15 mins

c) What average speed were they travelling in the first two hours?

$\frac{180}{2} = 90\text{km/hr}$

d) Circle the part in the graph when they were travelling the fastest. How do you know it is the fastest?

Steepest gradient ✓

e) What was the fastest speed the family travelled?

$\frac{100\text{km}}{45} = \frac{120\text{km}}{\text{hr}}$ ✓✓