|  |  |  |  |
| --- | --- | --- | --- |
| Name:  Teacher : | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | Date:\_\_\_\_\_\_\_\_\_ |
|  | **Year 11 Essentials**  \_\_\_\_\_\_\_ /46 marks  \_\_\_\_\_\_\_ %  **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.

|  |  |
| --- | --- |
| Ratio | Simplified |
| 30L : 60L |  |
| 25cm: 100m |  |
| 1.2KL : 3.6L |  |

**Question 2 [ 2+ 2 = 4 marks]**

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

1. His drawing table length is 12cm. How long is his table in real life?
2. His table height is 120cm tall. How big would the leg drawing be on the page?

**Question 3 [2 + 2 + 2 = 6 marks]**

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.

1. Find the rate at which Ben rode his bike
2. If Ben continued at the same pace, how far could he ride in 4 hours and 30 minutes.
3. Ben’s girlfriend Hannah completed the ride in 2 hours and 30 minutes. What was her average speed in km/h?

**Question 4 [2 + 2 = 4 marks]**

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

**Question 5 [2 + 2 = 4 marks]**

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.

1. Mr Power is taking $7500 AUD across the Europe for his Germany holiday. How many Euros would he receive?
2. Mr Power has 600 Euros left when returning to Australia, how much is this worth in Australian currency?

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

Convert into seconds

1. 45 minutes b) minutes c)1 hour 10 minutes

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

Convert into minutes

1. hours b) 1440 seconds c) 5 hours 13 minutes

**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** |

1. How many bus services are available each day?
2. What is the latest departure time?
3. What is the earliest arrival time back at the Swan Bells?
4. How long does it take to get from:  
   i) Burswood Park Heritage Walk to the Perth Mint

ii) Kings Park to Swan River

1. How long does the complete tour last?

**Question 9 [8 marks: 1, 1, 2, 2, 2]**

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



Distance

from home

(km)

Time (hours)

1. How long did the trip take in total (include the rest stops along the way)?
2. Approximately how long did they stop for along the way?
3. What average speed were they travelling in the first two hours?
4. Circle the part in the graph when they were travelling the fastest. How do you know it is the fastest?
5. What was the fastest speed the family travelled?

**End of Assessment**