|  |  |
| --- | --- |
| EGC_Black | Student Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    **Eastern Goldfields College**  Mathematics Essentials 2017  Investigation 6 – Getting to the Grand Final  1 |

Notes and Calculator Allowed **TIME:** 90 min  **TOTAL MARKS**: 58

This investigation is worth 15% of your semester mark.

**Equipment needed**: calculator, notes, ruler, plain paper for working.   
  
Your AFL football team finished in the top 4 this season. You decide that you and a friend want to get to Melbourne and the MCG to watch the Grand Final next year on Saturday, September 30, 2018. It is a once in a lifetime special weekend, so you are budgeting up to $4 000 per person. You plan to fly Friday **morning**, September 29, 2018 and return on Sunday afternoon, October 1, 2018. Organisation and choices are to be made before bookings can be completed.

**FLIGHTS  
Question 1 (25 Marks: 12, 10, 2)**

Review the return flight options available on the information package provided. There are 2 Qantas and 2 Virgin options.

**NOTE:** All of the times listed on the flights are Western Australia Times.

Choose 2 possible flight options from the 4 provided on the information sheet.

*a) Travelling from Kalgoorlie to Melbourne*

**CHOICE 1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flight  Number(s) | Departure | | | Arrival | | | Flight | |
| City | Time | | City | Time | |
| 12 h | 24 h | 12 h | 24 h | Length | Cost |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Was there a stop-over for this flight? See you information package for stop-over information. Yes / No

If yes, how long will the wait be in hours and minutes between flights? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the total length of journey in hours and minutes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CHOICE 2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flight  Number(s) | Departure | | | Arrival | | | Flight | |
| City | Time | | City | Time | |
| 12 h | 24 h | 12 h | 24 h | Length | Cost |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Was there a stop-over for this flight? Yes / No (circle)

If yes, how long will the wait be in hours and minutes between flights? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the total length of journey in hours and minutes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Choose 2 possible flight options from the 4 provided on the information sheet.

*b) Travelling from Melbourne to Kalgoorlie*

**CHOICE 1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flight  Number(s) | Departure | | | Arrival | | | Flight | |
| City | Time | | City | Time | |
| 12 h | 24 h | 12 h | 24 h | Length | Cost |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Was there a stop-over for this flight? Yes / No (circle)

If yes, how long will the wait be in hours and minutes between flights? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the total length of journey in hours and minutes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**CHOICE 2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flight  Number(s) | Departure | | | Arrival | | | Flight | |
| City | Time | | City | Time | |
| 12 h | 24 h | 12 h | 24 h | Length | Cost |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Was there a stop-over for this flight? Yes / No (circle)

If yes, how long will the wait be in hours and minutes between flights? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the total length of journey in hours and minutes? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Which flight is the best option for getting to Melbourne? Give two reasons why.

**ACCOMMODATION**

**Question 2 (17 marks: 2, 4, 3, 2, 2, 2)**

Both you and your friend will share a hotel room to save costs. You have a choice of 2 hotels in Melbourne, they are.

* **Rydges** Melbourne located at the *corner* of Exhibition St and Lt Bourke Street, Melbourne VIC.
* **Crown Towers**, also known as *Crown Promenade* located at the *corner* of Whiteman St and George/Market St, Southbank VIC.

Information about these two hotels is located in your information package.

1. Use the key and the addresses listed above to assist you in locating the two hotels on the map provided.   
   * Rydges is located at map co-ordinates: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Crown Towers is located at map co-ordinates: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. You have decided to avoid the crowds and walk to the Melbourne Cricket Ground (MCG) for the grand final from your hotel. The MCG is located at map co-ordinates, U14.

From each hotel, decide the path you **could** walk and the distance. Include directions and street names in your description. Measure to the South West entrance of the MCG, located near the end of the bridge over Brunton Ave.

**Rydges**

Path:

Walking Distance (Show all working):

**Crown Towers/Promenade**

Path:

Walking Distance (Show all working):

1. The average person walks at 5 km / h. Using the average walking speed, calculate the time it would take the average person to walk:

* From Rydges to the MCG (show working)
* From Crown Towers to the MCG (show working)

1. Review the information package about each hotel and your answers for question 2 above and choose which hotel you will book and explain the reason for your choice.
2. Cost of stay
   * How many nights will you be staying at the hotel? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Describe the package you have chosen. (Give a little more detail)
   * What is the total cost of staying at this hotel?
3. The AFL Grand Final is set to start at approximately 2:20 pm. You want to arrive 1 hour and 15 min before the game to enjoy the pre-game activities.   
   * What time do you want to arrive at the MCG?
   * Using your answer from part c) what time do you need to leave your hotel to arrive at this time?

**PUBLIC TRANSPORT**

**Question 3 (8 marks: 2, 1, 2, 1, 1)**

Now that you have planned your flights and accommodation, you now need to determine how you travel from the airport to your hotel.

There are two public transport options available, Taxi or Sky Bus.

1. Taxi services in Melbourne all follow a set rate. This rate is provided in your information package.   
   The distances from the airport to each hotel is as follows:
   * Airport to Rydges is 23.977 km
   * Airport to Crown Towers / Promenade is 25.677 km

Calculate the cost of a taxi to travel from the Melbourne airport to your hotel, rounding your answer to the nearest dollar. Show all working. Use the formula F= 2 + 3.2 + (D x C) where:

F= Total cost of Fare D= Distance Travelled C= Cost per Kilometre

1. Your arrival time into Melbourne is in Western Australian time. Due to time zones, Melbourne, Victoria is 2 hours ahead of WA. This means you add 2 hours to your arrival time and that is the time in Melbourne.

What is your arrival time into Melbourne, in Melbourne time? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Sky bus services is an express bus from the Airport to the City Centre, return. For more information, see your information package.

* Review your flight information and assume you have to wait 30 min for your luggage, choose a suitable Sky Bus, departure time.

* How long will you have to wait, in minutes, from the end of your flight to the Sky Bus departure time?

1. Calculate the cost of travelling from the airport to your hotel, using the Sky Bus.
2. Which mode of transport will you choose and why?

**GAME PACKAGES**

$1600 - This package includes: breakfast (9:30 am, at the   
 ANZ stadium), guest speakers, premium seat for the   
 game.

$550 - Premium Ticket Entry

$200 - Standard Ticket Entry

**BUDGET / COSTS**

**Question 5 (8 marks: 3, 2, 1, 1)**

1. Complete the table below and determine the total cost for both you and your friend to travel and stay at Melbourne for the AFL Grand Final next year.

|  |  |  |
| --- | --- | --- |
| **Item** | **Cost Each** | **Total Cost** |
| Flights to Melbourne and return |  |  |
| Accommodation |  |  |
| Public Transport from Airport to Hotel and return |  |  |
| Game Package |  |  |
| **TOTAL COST** |  |  |

1. Both you and your friend have $4,000 each to spend on this trip. Do you have enough money to cover flights, accommodation, game package and public transport to and from the airport? Use calculations to justify your answer.

1. List one option you could you do to reduce your overall costs for this trip?
2. List 2 other expenses, not listed above, that you would also need to budget for?

**DAILY SCHEDULE**

**Question 6 (5 marks)**

Create a schedule of events for your entire trip. Ensure you include each of the following:

* Day
* Event (flight, hotel, grand final)
* Time - Arrival time **and** Departure time for every event
* Assume
  + it takes 1 hour to travel between airport and your hotel (using either taxi or Sky bus)
  + you need to be at the airport 1 hour before your flight