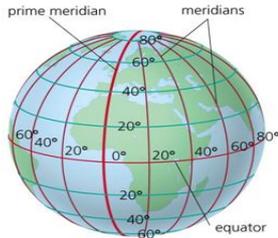


## Goals

This week and next week we are going to:



- locate positions on Earth's surface using appropriate technology
- solve problems involving time zones in Australia and in neighbouring nations, making any necessary allowances for daylight saving
- solve problems associated with time zones; for example, internet and phone usage; solve problems relating to travelling east and west, incorporating time zone changes; solve problems involving Greenwich Mean Time and the International Date Line

## Theoretical Components

### Resources:

PDF file: Week 9 to 11 Travel

These articles provide excellent advice on ways to help you obtain the best deal for air fares and travel:

- <https://www.nomadicmatt.com/travel-tips/how-to-find-a-cheap-flight/>
- <https://www.tripsavvy.com/air-travel-planning-4138681>
- <https://www.choice.com.au/travel/money/travel-insurance/review-and-compare/travel-insurance>
- <https://understandinsurance.com.au/types-of-insurance/travel-insurance>

Sites such as <https://www.wotif.com/> can be very useful for finding good deals for accommodations.

### Knowledge Checklist

- Travel around the world

### Order

1. Use week 9 to catch up on you previous booklets
2. Work through the Week 10 and 11 booklet
3. Complete the Portfolio task
4. Complete the reflection at the end of the booklet
5. Show your teacher the completed booklet

## Practical Components

Work through the exercises and show the completed tasks to your teacher.

Week 9 Catch up for last term

Week 11 starts at the 'Travel Insurance' section.

## Portfolio Task

See the last page of the booklet

Other



## ESSENTIAL MATHEMATICS 4

### WEEK 10 AND 11 – TRAVEL

#### Flying overseas

Most people travel overseas by plane because sea travel takes a long time. However, this is changing as more people discover the pleasures of a sea cruise.

#### How much will it cost?

Different airlines charge different prices. Prices depend on many things, including the convenience of flight schedules, the quality and reliability of service, competition from other airlines and the time needed to complete the flight. Individual airlines charge more for a flight in the peak season than for the same flight in the off season.

On the same flight, passengers choosing to fly Economy Class pay a cheaper fare than those who choose to travel Business Class or First Class.

This table shows one airline company's cost schedule.

**Return airfare from Canberra to London**

Departure date	Airfare per person
February, October, 1-15 November	\$2299
January, March, April, 16-20 September, 16-30 November	\$2499
1-15 May	\$2599
16-31 May, 1-15 September, 1-10 December, 24-31 December	\$2799
June, July, August, 11-23 December	\$2899

**Note:**

- Infants (under 2 years), not occupying a seat, pay 10% of the adult fare.
- Children (2-11) pay 67% of the adult fare.

#### Example 1

Maria and her 18-month-old baby are travelling to London for the Christmas season. They will be leaving Canberra on 8 December. Calculate their total return fare.

#### Solution

8 December is included in the second last row of the table.

Maria's fare will be \$2799.

Baby's fare = 10% of \$2799

Baby's fare =  $\frac{1}{10} \times \$2799$ , (10% is  $10 \div 100$ , which is the same as  $1 \div 10$ )

Baby's fare = \$279.90

Total fare will be  $\$2799 + \$279.90 = \$3078.90$

## Exercise 1

Use the information in the table and note below to answer questions 1 to 5.

### Return airfare from Canberra to New York

Departure date	Airfare per person
February, October, 1-15 November	\$2099
January, March, April, 16-20 September, 16-30 November	\$2250
1-15 May	\$2449
16-31 May, 1-15 September, 1-10 December, 24-31 December	\$2599
June, July, August, 11-23 December	\$2659

**Note:**

- Infants (under 2 years), not occupying a seat, pay 10% of the adult fare.
- Children (2-11) pay 75% of the adult fare.

1. Zoe and her cousin plan to fly to New York to spend Christmas with family.
  - a. How much is the return airfare for each person if they leave from Canberra on 13 December?
  
  
  
  
  
  
  
  
  
  
  - b. How much cheaper will the total fare be if they can leave work earlier and leave on 8 December?
  
  
  
  
  
  
  
  
  
  
2. Kate and her 3-year-old son flew to New York on 10 May. Calculate their total return fare.
  
  
  
  
  
  
  
  
  
  
3. Lee and Liz have twins, 19 months old. The family is planning a return trip to New York in July. Calculate the total cost of their airfare.

4. Why do you think the airfares to New York are more expensive in June and July than in October and November?

5. Why do you think children fares are cheaper than adult fares? What could be reasons for cheaper children fares?

6.

<b>Kanga Airline</b>	
Canberra to Europe	
Return Prices	
Economy	\$2400
Business	\$5900
First Class	\$6900

a. How much more expensive is a First Class return ticket with Kanga Airline than a Business Class ticket?

b. How many times more expensive is a First Class return ticket than an Economy Class ticket?

## Reading airline tickets

In the past, all airline tickets were paper. Today most tickets, particularly for flights within Australia, are electronic. However, some overseas tickets are still printed on paper. A lot of information is contained on a paper ticket.

### Exercise 2

1. Use the information on this ticket to answer the following questions.

Issued by QANTAS			Date of Issue				
Crabtree / D Mr			30 Mar 07				
Travel	Carrier	Flight	Class	Date	Time	Not valid before	Not valid after
From BRISBANE	QF	41	E	6 April	1115		6 Nov
To SINGAPORE	//	VOID					
VOID							
Fare AUD 1570							

- Where is this flight heading to?
- What airline issued the ticket?
- What is the passenger's name shown on the ticket?
- What is the flight number?
- At what time does the flight leave Brisbane?
- How much was the fare?
- What does AUD stand for?

2. Jasmine is going on a holiday. This is a copy of her airline ticket.

Issued by QANTAS			Date of Issue				
Goodman / J Miss			30 Mar 07				
Travel	Carrier	Flight	Class	Date	Time	Not valid before	Not valid after
From BRISBANE	QF	21	E	6 Jun	2215		6 Dec
To TOKYO	//	VOID					
From TOKYO	QF	22	E	20 Jun	1100	12 Jun	6 Dec
To BRISBANE	//	VOID					
VOID							
Fare AUD 2599							

- a. Where is Jasmine going for her holiday?
- b. What date will she leave for her holiday?
- c. What time will the plane leave Brisbane?
- d. What is the flight number from Brisbane?
- e. Jasmine plans to leave her watch on Brisbane time. The flight to Tokyo will take 9 hours and 35 minutes. What time will be on Jasmine's watch when she arrives in Tokyo?
- f. The time in Tokyo is 1 hour behind the time in Brisbane. What time will Jasmine need to set her watch when she lands in Tokyo?
- g. What date will Jasmine be leaving Tokyo to come home?

h. On her return flight, Jasmine will need to be at the airport 3 hours before the flight leaves. What time will Jasmine need to get to the airport for her flight home?

i. How much did Jasmine pay for the return ticket to Tokyo?

3. When Zachary came home to Australia after an Asian tour, his bags weighed a total of 27.2 kg. The charter flight company allowed each passenger 18 kg of baggage and it charged \$3.60 for each kilogram, or part kilogram, of excess baggage. How much did Zachary have to pay in excess baggage?

4. Will is allowed 20 kg of luggage on a flight home from Europe. The airline company charged \$5 per kilogram, or part thereof, for excess luggage.



a. How much did Will's bags weigh?

b. How much did Will have to pay for excess luggage?

5. Passengers receive boarding passes when they check in for their flight.

SINGAPORE		AIRPORT	
KANGA		AIRLINE	
BOARDING		PASS	
Flight	Destn	Boarding	Gate
KA0021	SYD	2135	D61
Date	Class	Seat	
28 Jan	E	46A	
Name: MULRAY   Miss			

- At what time will the passengers on Isabel's flight start boarding?
- At what gate will the passengers board the plane?
- What is the number of Isabel's seat?
- Between which two locations is Isabel's flight?

### Accommodation expenses

Accommodation can be a major holiday expense, and the right accommodation can be a vital part of enjoying your holiday. Most hotels have websites that allow you to look at the accommodation and facilities before you book.

### Exercise 3

This table shows the prices of some accommodation in Singapore.

#### Price per person in AUD

Hotel (Maximum number of people in a room: 3)	First night				Extra night			
	Single	Twin	Triple	Child*	Single	Twin	Triple	Child*
Kampong Hotel	205	117	112	1 Free	166	83	69	1 Free
Canal Hotel	212	130	119	2 Free	165	85	71	2 Free
Clifford Pier Hotel	205	110	115	29	160	83	69	Free
SPECIAL HOLIDAY DEAL								
Hotel	5 nights				Extra night			
	Single	Twin	Triple	Child*	Single	Twin	Triple	Child*
Kampong Hotel	799	399	340	1 Free	130	59	43	1 Free
Canal Hotel	830	445	379	2 Free	128	61	45	2 Free
Clifford Pier Hotel	799	395	350	1 Free	125	59	43	1 Free

\*Child is 12 years or under



5. Rihanna and her personal assistant frequently travel overseas on business. They always have separate, single rooms. As frequent travellers, the Canal Hotel offers them a 15% discount on their accommodation. How much will they be charged to stay three nights in the Canal Hotel?

6. How much will it cost Mr and Mrs Rogers and their children, Rebecca and Noah, ages 11 and 14, to stay in the Clifford Pier Hotel for three nights?

7. Monique stayed at the Canal Hotel for four nights. She signed for the following items on her account:

- Drinks from the bar      \$55
- Hire of the tennis court \$30
- Room service food      \$48

When she checked out, she was given a bill for \$721. How much did the hotel undercharge her?

8. This table shows the accommodation charges of two Bangkok hotels.

**Price per person in AUD**

Hotel (Maximum number of people in a room: 3)	First night				Extra night			
	Single	Twin	Triple	Child*	Single	Twin	Triple	Child*
Royal Hotel	57	37	29	10	45	29	27	Free
Garden Hotel	62	42	21	10	50	31	26	5

\*Child is 12 years or under

a. Which hotel would be cheaper for Laura and Lara's overnight stay in Bangkok?

b. Mr and Mrs Barton and their son Lachlan, age 8, stayed in Bangkok for 3 nights. How much did they save by staying in the Royal Hotel instead of the Garden Hotel?

c. As part of a holiday after the end of school, Kaine, Kai and Jonah plan to spend 3 nights in Bangkok. Which hotel will be cheaper to stay in?

9. This table shows the cost in, Australian dollars, of car hire in Europe.

<b>Car</b>	<b>23-day hire</b>	<b>33-day hire</b>	<b>Extra day cost</b>
JR three-door	\$1315	\$1500	\$27
Paris S/W	\$2130	\$2390	\$40

a. Joel hired a JR three-door for 25 days. How much did it cost him?

b. James is hiring a Paris S/W. After how many days will it be cheaper to hire the car for the 33-day hire rate, than to pay the 23-day rate plus the extra day cost?

## Travel Insurance

If you get sick, have an accident, or face another type of emergency, you can have very large expenses. Everyone who travels is advised to have travel insurance. Medicare and most health funds will not cover you automatically for any medical expenses you have when you are overseas.

Travel insurance covers the cost of medical treatment, lost baggage, emergency accommodations and other misfortunes that may happen on your trip.

This table shows the benefits (limits on cover) and costs (premiums) of two travel insurance companies. All prices are in Australian dollars.

	Emu Insurance				Travelwise Insurance					
LIMITS ON COVER										
Events	Asia/Pacific		Worldwide		Asia		Pacific		Worldwide	
	Single	Family	Single	Family	Single	Family	Single	Family	Single	Family
Cancellation fees	2500	6000	6000	9000	unlimited		unlimited		unlimited	
Loss of baggage	2500	6000	4000	7000	5000	10000	5000	10000	5000	10000
Medical expenses	35000	80000	200000		unlimited		unlimited		unlimited	
Travel delay	2500	6000	2500	4000	10000		10000		10000	
PREMIUMS										
Days	Asia/Pacific		Worldwide		Asia		Pacific		Worldwide	
	Single	Family	Single	Family	Single	Family	Single	Family	Single	Family
9	90	175	100	193	93	174	60	100	175	340
12	130	240	131	260	125	245	73	124	185	360
18	174	286	184	321	169	275	93	162	310	610
24	205	410	225	430	210	400	110	190	422	733
31	311	572	305	579	329	633	124	257	553	887

### Example 2

Jack is going to travel to Asia. How much will his travel insurance cost with Travelwise insurance for:

- 9 days?
- 10 days?

### Solution

The insurance rates for Jack's trip are in the third column from the right in the table.

- 9 days will cost \$93.
- There is no premium for 10 days. Jack will have to pay for 12 days' insurance. Jack's premium for 10 days will be \$125.





## Currency exchange

Even though you may be planning to use a credit or prepaid card when you are overseas, you will need access to local currency to pay bills such as bus and taxi fares and to buy small items of food. If you have an ATM card that has a blue 'cirrus' icon on the back, you can use the card in overseas teller machines to obtain local currency.

When you obtain money in this way, the receipt, including the current balance in the account, will be in the currency of the country where you withdrew the money. Even though you obtain cash electronically, you still need to know how much you are paying, in Australian dollars, for overseas purchases.

## Money conversions

The value of money changes all the time. The amount of money that can be exchanged for \$A1 (one Australian dollar) is the exchange rate. Each day, exchange rates are published in newspapers, on television and on the Internet.

The easiest way to determine currency conversions is to use an online converter. However, if you are planning to buy items in local markets overseas, you are unlikely to be able to use the Internet and will need another way to calculate currency exchange.

The examples below are using the following exchange rates:

$$\begin{aligned} \$A1 &= \$0.92 \text{ Canadian dollars} \\ &= 0.62 \text{ euros} \\ &= 10.72 \text{ South African rand} \end{aligned}$$

### Example 3

1. Convert \$500 Australian dollars into euros.
2. Convert 2890 South African rand into Australian dollars

### Solution

1. To change Australian dollars into another currency, **multiply** by the \$A1 exchange rate.  
 $\$A1 = 0.62 \text{ euros}$   
 $\$A500 = 0.62 \times 500 \text{ euros}$   
 $\$A500 = 310 \text{ euros}$
2. To change another currency into Australian dollars, **divide** by the \$A1 exchange rate.  
 $10.72 \text{ rand} = \$A1$   
 $2890 \text{ rand} = \$A(2890 \div 10.72)$   
 $2890 \text{ rand} = \$A269.85$

## Exercise 5

1. Convert \$2500 Australian dollars into:
  - a. Canadian dollars
  - b. South African rand
  - c. euros
  
2. Express the following amounts in Australian dollars.
  - a. \$630 Canadian dollars
  - b. 350 rand
  - c. 900 euros
  
3. Suppose that the conversion rate between Australian dollars and Thai baht is  $\$A1 = 24.13$  baht. Convert \$250 Australian dollars into baht.
  
  
  
  
  
  
  
  
  
  
4. When Chloe was shopping in a Thai market, she wanted to buy some local products priced at 65 baht. How much is this in Australian dollars?
  
  
  
  
  
  
  
  
  
  
5. Charlize worked out a quick way to convert a price in baht to a price in Australian dollars in her head. Her method is to disregard the last two digits and multiply the remainder by 5. For example, to change 213 baht into dollars, forget the 13 and just multiply the 2 by 5 to get approximately \$A10. Use Charlize's method to determine an approximate Australian dollar equivalent to 406 baht. How accurate is Charlize's method for this approximation?

## A Canadian holiday

Jane and John enjoy skiing, and they decide to spend their honeymoon skiing in Alberta, Canada. They also plan to see the Rocky Mountains by train. Jane and John's luggage includes a laptop worth \$2200 and a DSLR camera worth \$1200 along with clothes worth \$1300 each.

### Exercise 6

- Jane and John plan to fly directly to Vancouver in Canada after the wedding on the 30<sup>th</sup> September. The flight takes 24 hours. The time in Brisbane is 18 hours ahead of the time in Vancouver. If they leave Brisbane at 12 noon on the 1<sup>st</sup> October, what date and time will it be in Vancouver when they arrive?
- Jane and John plan to stay one or two days in Vancouver, then catch the Rocky Mountaineer train to Banff. From Banff they will travel to Lake Louise to go skiing for a week. These tables show the dates on which the Rocky Mountaineer train leaves Vancouver for Banff and Lake Louise, and the cost of GoldLeaf tickets.

#### Rock Mountaineer GoldLeaf Service

Vacation Start Dates	
April	17 22 26
May	1 6 8 10 13 15 17 20 22 24 27 29 31
June	3 5 7 10 12 14 17 19 21 24 26 28
July	1 3 5 8 10 12 15 17 19 22 24 26 29 31
August	2 5 7 9 12 14 16 19 21 23 26 28 30
September	2 4 6 9 11 13 16 18 20 23 25 27 30
October	2 4 7 9 11

#### Price per person in CDN\$

Starts Vancouver	Popular hotels		Superior hotels		Deluxe hotels	
	Double	Single	Double	Single	Double	Single
17 Apr. – 26 Apr.	\$1849	\$2219	\$1979	\$2469	\$2199	\$2879
27 Apr. – 27 May	\$2249	\$2769	\$2489	\$3219	\$2769	\$3769
28 May – 27 Sept.	\$2599	\$3339	\$2949	\$4039	\$2689	\$3619
28 Sept. – 11 Oct.	\$2229	\$2719	\$2410	\$3089	\$2689	\$3619

- Which date would you recommend they book tickets to travel on the train?

- b. If Jane and John stay in Superior hotels, how much will their Rocky Mountaineer trip cost them in Canadian dollars?
- c. Convert the cost to Australian dollars. Use \$A1 = \$0.92 Canadian dollars.
3. Jane made some enquiries about travel insurance. She was told that Rocky Mountaineer insurance for Canadians is 7% of the cost of the train trip.
- a. Calculate the cost of the train trip insurance for Canadians, staying in Superior hotels, twin share.

- b. Visitors to Canada have a choice of four different travel insurance plans that provide cover for people going skiing. The following table gives the costs per person in Canadian dollars.

**Rocky Mountains Travel Insurance**

<b>Age (years)</b>	<b>\$10,000</b>	<b>\$25,000</b>	<b>\$50,000</b>	<b>\$150,000</b>
0 – 40	\$2.50/day	\$3.00/day	\$3.30/day	\$4.50/day
41 – 60	\$2.70/day	\$3.30/day	\$3.60/day	\$6.00/day
61 – 70	\$3.90/day	\$4.90/day	\$5.90/day	N/A

Jane and John, both aged in their twenties, would each like top insurance cover for the 12 days for which they plan to be away from home. Calculate the cost of their travel insurance in Canadian dollars and Australian dollars.

## Portfolio Task Week 10 and 11

1. When travelling overseas you need a current passport. You may not have one yet. How do you obtain an Australian passport? This website has some information: <https://www.passports.gov.au/getting-passport-how-it-works/how-get-adult-passport>
2. What is a visa?
3. Do you need a Visa for New Zealand? Are there any countries in Australiasia that require a Visa (for Australian travellers)? This website might be useful: <https://www.projectvisa.com/>
4. Visit the Government website below and determine the current advice for travelling in New Zealand.  
(<https://www.smarttraveller.gov.au/destinations/pacific/new-zealand>)

## MARKING RUBRIC

CRITERIA	EXPECTATIONS	POSS	MULT	GIVEN	TOTAL
<b>Practical</b>	Student completes practical work, including exercises of the brief to an acceptable standard set by the teacher.	2	3		/6
<b>Portfolio Task</b>	Student completes the portfolio task of the week to an acceptable standard set by the teacher.	2	2		/4
<b>Reasoning and Communications</b>	Student responses are accurate and appropriate in presentation of mathematical ideas, with clear and logical working out shown.	4	-		/4
<b>Concepts and Techniques</b>	Student submitted work selects and applies appropriate mathematical techniques to solve practical problems and demonstrates proficiency in the use of mathematical facts, techniques and formulae.	4	-		/4
	<b>Submission Guidelines</b>				
<b>Timeliness</b>	Student submits the exercises and portfolio tasks by the set deadline. See scoring guidelines for specific details.	2	-		/2
				<b>FINAL</b>	<b>/20</b>

### Student Reflection:

How did you go with this week's work? What was interesting? What did you find easy? What do you need to work on?