

**AUSTRALIAN ISLAMIC COLLEGE**

**MATHEMATICS LEARNING AREA**

**Australian National Curriculum**

**Mathematics Year 8 Holiday Homework**

**Term 3, 2016**

**(Take home part) (Given out: Wk 9 Term 3)**

**(Validation: Wk 2, Term 4)**

**Cluster: Space and Measurement**

**Name:** \_\_\_\_\_ **ID No:** \_\_\_\_\_

**Teacher:** \_\_\_\_\_ **Date:** \_\_\_\_\_

- This investigation should be completed by yourself.
- You may seek help from any Maths teacher, but limited help is offered.
- This take-home part needs to be submitted by Week 1 Term 4.
- Answer ALL questions clearly.

## **TIME**

Time in minutes and seconds is based on the number 60. Other units of time, including the day and year, are defined by the rate at which the Earth spins on its axis and the time that the Earth takes to orbit the Sun. The origin of the units, seconds and minutes dates back to the ancient Babylonians, who used a base 60 number system. The 24-hour day dates back to the ancient Egyptians, who described the day as 12 hours of day and 12 hours of night. Today, we use am (ante meridiem, which is Latin for 'before noon') and pm (post meridiem, which is Latin for 'after noon') to represent the hours before and after noon (midday). During the rule of Julius Caesar, the ancient Romans introduced the solar calendar, which recognised that the Earth takes about 365.25 days to orbit the Sun. This gave rise to the leap year, which includes one extra day (in February) every 4 years.

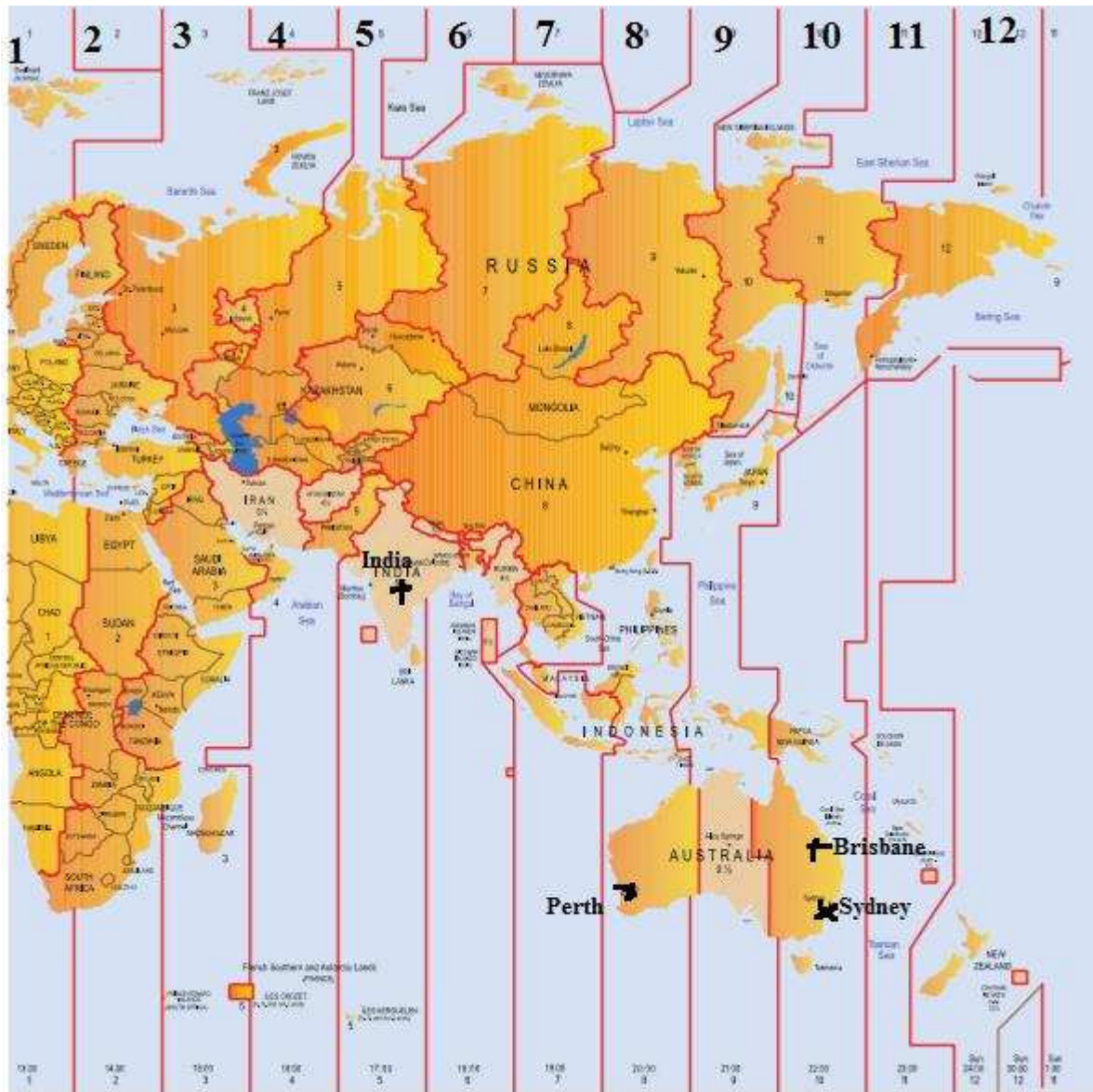
Lines of longitude divide the Earth into its time zones. Time zones also depend on a country's borders and its proximity to other countries.



Time is based on the time in a place called Greenwich, England, and this is called Coordinated Universal Time (UTC) or Greenwich Mean Time (GMT). Places east of Greenwich are ahead in time. Places west of Greenwich are behind in time.

Australia has three time zones: • Eastern Standard Time (EST), which is UTC plus 9 hours. Central Standard Time (CST), which is UTC plus 8.5 hours. • Western Standard Time (WST), which is UTC plus 7 hours.

In Australia, the Western Time Zone is 2 hours behind the Eastern Time Zone and the Central Time Zone is 0.5 hours behind the Eastern Time Zone.



## Question 1

- a) Why do we have a leap year?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- b) List the months which have 31 days?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- c) Why are there different times in different countries?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- d) What do **BCE** (or **BC**) and **CE** (or **AD**) mean on time scales?

**Question 2 Complete the following:**

- . (a) 1 minute = \_\_\_\_\_ seconds
- . (b) 1 hour = \_\_\_\_\_ minutes
- . (c) 1 day = \_\_\_\_\_ minutes
- . (d) 1 day = \_\_\_\_\_ seconds
- . (d) 1 week = \_\_\_\_\_ minutes
- . (e) 1 year = \_\_\_\_\_ days
- . (f) 1 year = \_\_\_\_\_ minutes
- . (g) 1 year = \_\_\_\_\_ seconds
- . (h) How many time zones is Earth divided up into?

### **Question 3**

Name any five countries which are:

(a) ahead of GMT

(b) behind GMT

### **Question 4**

When it is noon in Greenwich, what is the time in these places? **SHOW HOW YOU GOT YOUR ANSWER.**

(a) Sydney

(b) Perth

(c) Darwin

(d) Washington, DC

(e) Auckland

### **Question 6**

When it is 2:00 pm on Wednesday in Australia's Eastern Time Zone (this is called Eastern Standard Time (EST)). Work out the time and day in these places:

- (a) Perth
  
- (b) Adelaide
  
- (c) London
  
- (d) Western Canada

### **Question 7**

- (a) When leaving Perth, do you adjust your watch forwards or backwards when you are travelling to these places?
  - (i) India
  
  - (ii) New Zealand
  
- (b) In which direction should you adjust your watch if you are flying over the Pacific Ocean?



### **Question 8**

You fly from Perth leaving at 12 noon to Brisbane on a 4-hour flight.

(a) What is the time in Perth when you arrive in Brisbane?

(b) What is the time in Brisbane when you arrive?

### **Question 9**

A flight from Perth to Edinburgh takes 20 hours. If the flight departed on Wednesday at 6:00 am Perth local time,

(a) What time and day will the flight arrive in Edinburgh?

(b) When it arrives in Edinburgh, what will be the day and time in Perth?

*End of Investigation (take-home part)*