

## YEAR 11, MATHS

### Milestone No.3: Time and Formulas

**DUE DATE:** Friday (3<sup>rd</sup> September) Term 3

**WEIGHTING:** 20%

**TEACHER/S:** Damian Wilesmith

**Outcomes:**

- MS11-1 uses algebraic and graphical techniques to compare alternative solutions to contextual problems
- MS11-2 represents information in symbolic, graphical and tabular form
- MS11-3 solves problems involving quantity measurement, including accuracy and the choice of relevant units
- MS11-10 justifies a response to a given problem using appropriate mathematical terminology and/or calculations

**Instructions:**

All questions worth 2 marks unless specified otherwise

Round all answers to 2 decimal places, where needed

Calculators allowed

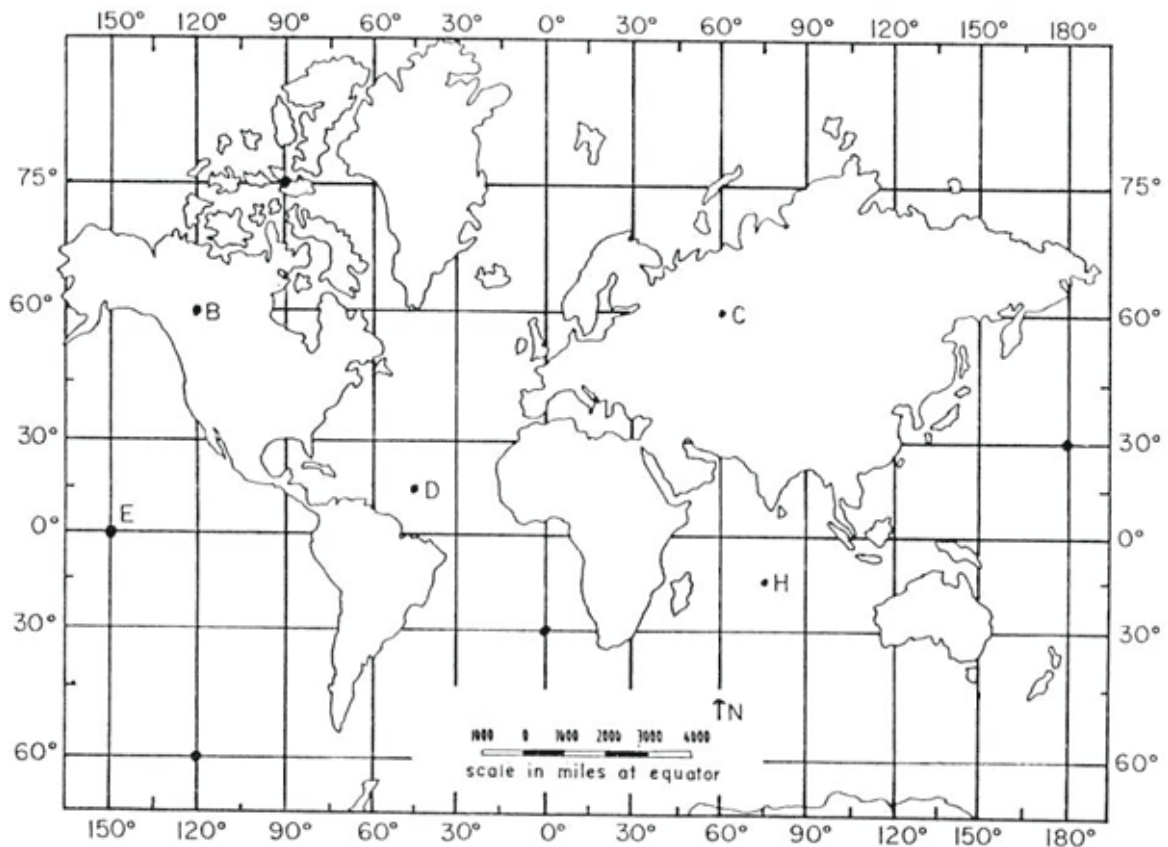
Student name: \_\_\_\_\_

1. If $m = 4, n = -3, y = 10$ and $z = 0$ find the value of	
a) $5m$	b) $mny$
c) $6y - 7n$	d) $\frac{3y+nz}{4m}$
2. Answer the following	
a) For the formula $v = u + at$ , find $v$ if $u = 4, a = 8$ and $t = 22$	b) What is the value of $\frac{yA}{y+12}$ when $y = 9$ and $A = 15$
3. The formulas for finding the blood alcohol content (BAC) of both males and females are given below.	
$BAC_{Male} = \frac{10N - 7.5H}{6.8M} \text{ and } BAC_{Female} = \frac{10N - 7.5H}{5.5M}$ <p><i>N: Number of standard drinks    H: Hours drinking    M: Mass</i></p>	
a) Calculate the BAC of a 58kg female who has consumed 5 standard drinks in the past 2 hours.	b) Calculate the BAC of a 95kg male who has consumed 4 standard drinks in the past 1 hour.
4. Solve these equations	
a) $m - 5 = 11$	b) $g + 8 = 17$
c) $5x = 35$	d) $\frac{x}{3} = 9$

# Time

1. Write the following in 24 hour time:	
a) 8:22 am	b) 9:33pm
2. Write the following in 12 hour time:	
a) 1652	b) 0234
3. How many minutes in the following?	
a) $2\frac{1}{2}$ hours	b) 6 hours 52 mins
4. Change the following to hours and minutes:	
a) 140 mins	b) 553 mins
5. What is the time difference between the following:	
a) 5:40pm and 7:20pm	b) 7:43am and 9:39pm

6. Use the following map below to write the coordinates of the following letters in the correct format. For instance point B is  $60^{\circ}N$   $120^{\circ}W$  (1 mark each)



C:	E:
H:	D:

## Extension / Bonus:

1. Fremantle (UTC +8) is located in the Western Standard Time zone. Dubbo (UTC +10) is located in the Eastern Standard Time Zone.
  - a. Isabella, who is in Dubbo, rang a friend in Fremantle at 8:00pm on a Saturday. What day and time was it in Fremantle?
  
  
  
  
  
  
  
  
  
  
  - b. Isabella caught a plane, at 8:00pm on a Saturday, from Dubbo to Fremantle. The travel time for the trip was 5 hours. When will Isabella arrive in Fremantle?
  
  
  
  
  
  
  
  
  
  
2. Molly flew from Sydney (UTC +10) to Chittagong (UTC +6). Her plane left Sydney at 8:30am Thursday (Sydney time), stopped for 4 hours in Singapore and arrived in Chittagong at 1:00pm Thursday (Chittagong time). What was the total flying time?
  
  
  
  
  
  
  
  
  
  
3. Lucy is sailing across the Pacific Ocean. At 8:30am on Saturday 9 July her position is (UTC -8) and she is heading for Tahiti at (UTC – 10). At 8:30am on Saturday 9 July, she rings her sister in Tahiti. What is the local time and date when her sister takes the call?