



AUSTRALIAN International School
المدرسة الأسترالية الدولية

Middle School

STUDENT NAME: _____

CLASS: _____

TEACHER NAME: _____

VERSION A

UNIT: Number II

ISSUE TOPIC: Rate and Ratio

ASSESSMENT TASK: Test

ASSESSMENT DESCRIPTION:

- Part A: 8 Questions - Concepts
- Part B: 6 Questions – Simple worded problems
- Part C: 2 Questions – Worded problems

CONDITIONS OF ASSESSMENT:

- **Length:** 50 mins
- **Resources:** A calculator may be used but is not required.
- Read all questions carefully.
- Answer all question in the spaces provided. All working out to be shown on test paper in the spaces provided.

SUMMARY OF RESULTS

CRITERIA ASSESSED	STANDARD
KNOWLEDGE & UNDERSTANDING – 50%	
THINKING & REASONING – 50%	
OVERALL RESULT	

Mathematics

YEAR 6/7

2010/2011

TERM 2

TASK: Number

Test II

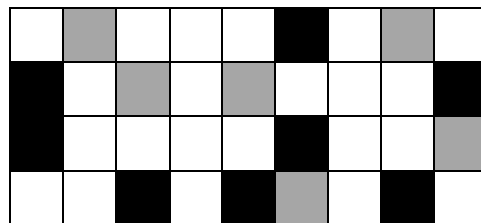
Part A

1. Express the following as ratios in **simplest** form:

a White squares to grey squares _____ : _____

b Black squares to white squares _____ : _____

c Grey and black squares to the total. _____ : _____



2. **Simplify** these ratios:

a 24:36

b 12:2

c 16:4

d 18:3

e 3:36

_____ : _____

_____ : _____

_____ : _____

_____ : _____

_____ : _____

3. Find the missing numbers:

a $7:8 = \underline{\quad}:40$

b $3:2 = 12:\underline{\quad}$

c $2:\underline{\quad} = 12:24$

4. Simplify the following ratios: Show your working out.

a 15m:250cm

b 900g:1.2kg

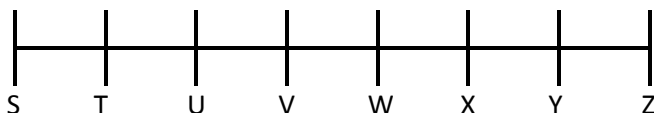
c 25min:2 hours

_____ : _____

_____ : _____

_____ : _____

5. Which point divides the line SZ in the following ratios?



a 1:6 _____

b 3:4 _____

c 4:3 _____

d 2:5 _____

e 12:2 _____

f 10:4 _____

6. At Falcon High School, classes were analysed for the number of girls and boys. Complete the following table. Show your working out in the table below.

Class and number	Ratio of boys to girls	Number of boys	Number of girls
5A, 24 students	2:1		
5B, 25 students	2:3		
5C, 21 students	3:4		

7. Express each of the following situations using a rate in **simplest** form. Be sure to write both units of measurement as your final answer. Write a sentence to finish off each question.

a The cost of a 9-kilogram gas cylinder was \$36

b A 20-litre can of paint costs \$90

c Australia needs to score 300 runs in 50 overs to win the 1-day international match

d The cost for a 15-minute mobile telephone call was 22.50 AED

8. If 15 metres of fencing wire costs 9 AED, find the costs of these lengths:

a 45 metres

b 90 metres

c 37.5 metres

Part B-SHOW YOUR WORK IN THE SPACE PROVIDED

9. The ratio of red balloons to green balloons in a display is to be 2:3

a Find the number of **green balloons** if there are:

i 40 red balloons

ii 100 red balloons

iii 250 balloons in total

b Find the number of balloons in total if there are:

i 15 green balloons

ii 350 red balloons

10. Yellow and red cordial is combined in the ratio of 1:2

a How much red cordial needs to be added to 30mL of yellow cordial?

b If this cordial mixture is added to water in the ratio 1:200, then how much water needs to be added to the above volume?

11. A radio contest win of 96 000 AED is shared in the ratio 3:2:1. Find the amount that each should receive.

12. Mohammed's Super fertiliser has lime, potash and nitrates mixed in the ratio 1:4:3. How much potash is there in a 20kg bag? Use a sentence for your answer.

13. Find the speed of the following in the units indicated:

a A snake slithers 20 metres in 30 seconds _____m/min

b An ant travels 20 metres in 3 minutes _____cm/min

14. Find the distance that a jet travelling at 800 km/h will cover in:

a 3 hours

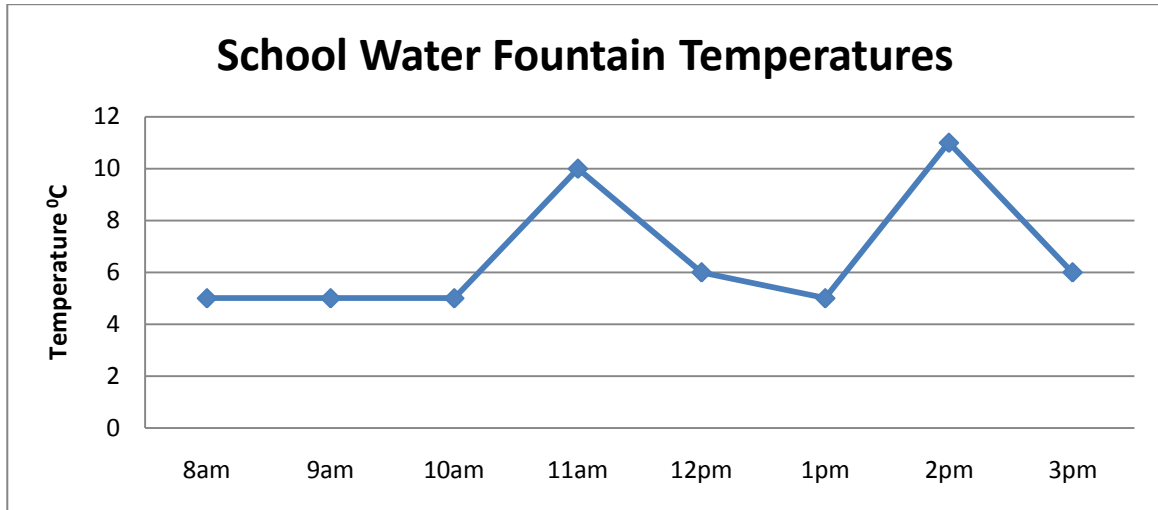
b 30 minutes

c 15 minutes

Part C

16. Mr. Michael would like to make some punch for his students. He needs to make 4 litres. Mr. Michael's punch will consist of 3 parts cranberry juice, 4 parts ginger-ale, 1 part pineapple juice, and 2 parts lemon. How many mL's of **each type of juice** does Mr. Michael need if his juice is mixed in the ratio of 3:4:1:2.

17. The data below shows the water temperature, in °C, in a school refrigerated drink fountain. Temperatures are measured from 8 a.m. to 3 p.m.:



- a What was the lowest water temperature?
- b What time do you think lunchtime began? Why?
- c At what rate did the water heat up between 10 and 11 a.m. (answer in degrees/hour)?
- d At what rate did the water cool between 2 and 3 p.m. (answer in degrees/hour)?
- e During what times was the water changing temperature the most rapidly?
- f When turned to full the cooler can drop the temperature by $\frac{1}{2}^{\circ}$ every 5 minutes. At this rate how long in hours would it take to change the temperature from 12° to 5° ?

Year: 6/7 KLA: Mathematics Assessment name: Number Test II

Purpose: To gather evidence of the students' ability to use rate and ratio concepts to solve problems.

Assessable elements Task-specific assessable elements	Task-specific descriptors				
	A	B	C	D	E
Knowledge and Understanding <i>Knows that rate and ratio can be used to describe relationships between quantities.</i> Parts A and B	Comprehensive knowledge and understanding of concepts, facts and procedures involving rate and ratio, relative to the student's year level.	Thorough knowledge and understanding of concepts, facts and procedures involving rate and ratio, relative to the student's year level.	Satisfactory knowledge and understanding of concepts, facts and procedures involving rate and ratio, relative to the student's year level.	Variable knowledge and understanding of concepts, facts and procedures involving rate and ratio, relative to the student's year level.	Rudimentary knowledge and understanding of concepts, facts and procedures involving rate and ratio, relative to the student's year level.
Thinking and Reasoning Uses written computations to generate solutions to practical problems involving rate and ratio, and to check for reasonableness Parts B and C	Insightful application of concepts to practical problems to generate consistently accurate solutions with clear explanations, where appropriate.	Proficient application of concepts to practical problems to generate accurate solutions with clear explanations, where appropriate.	Competent application of concepts to practical problems to generate successful solutions with clear explanations, where appropriate.	Variable application of concepts to practical problems with disjointed explanations, where appropriate.	Minimal application of concepts to practical problems with unclear or missing explanations, where appropriate.

Feedback

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Overall: A B C D E