Revision Test 1

MATHEMATICS

Paper 02

2 1/2 hours

INSTRUCTIONS TO CANDIDATES
1. This test consists of 8 problems
2. Answer ALL questions.
3. ALL working must be shown clearly.
4. The use of calculators is allowed.

Name:

Class:

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

1. (a) Simplify $\left(1\frac{2}{3} - 3\frac{3}{8}\right) \div 3\frac{1}{4}$

   (b) Evaluate the following $10 - (0.7 + 0.001)$

   (c) Write your answer to (b) above correct to 2 significant figure.

2. (a) Express $\dfrac{0.0521}{0.23}$
   (i)   correct to three decimal places
   (ii) correct to four significant figures
   (iii) in standard form.

   (b) Write the following numbers in standard form

   (i)   0.0000427

   (ii)   0.00000009582

   (iii)   4947682

   (iv)   9835

3. Given that K = 2, L = -3 and M = -1, find the value of

   (a) 5K – 2L

   (b) $\dfrac{KL + KM}{2K}$

   (c) KM^2 - L^3

4. Luke, Thomas and Mackerson were playing a board game.
Luke scored y points.
Thomas scored 6 points fewer than Luke and Mackerson scored thrice as many points as Luke.
Together they scored 31 points.

(a) Write an expression in terms of y for the number of points scored by Mackerson.

(b) Write an equation which may be used to find the value of y.
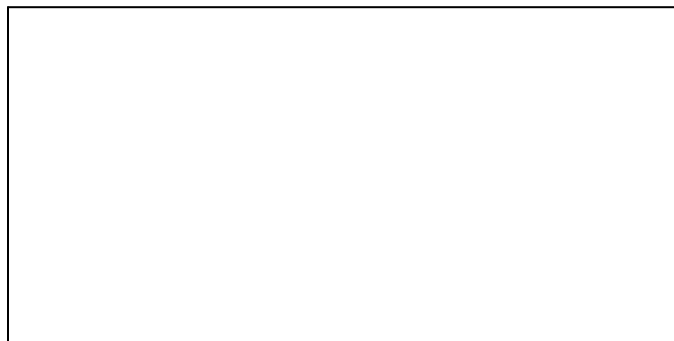
(c) Solve the equation to find y, hence find Luke score.

(d) Using the value for y, find Thomas' score.

5. The Universal set, U, is given as
U = {1, 2, 3, ..., 20, 21, 22}.
The sets of E and F are subsets of U such that
E = {Factors of 18}
F = {Multiples of 3}

(a) List the members of set E

(b) List the members of set F

(c) Represent the set E, F and U, on a Venn Diagram.

(d) List the members of (E∩ F)

(e) List the members of $(E \cup F)'$

6. (a) $45,500 is to be divided between two cousins in the ratio 6:4.

What was the amount of the smaller share?

(b) (i) A sum of money is shared between two classmates in the ratio 3:12.
If the smaller amount is $360, find the larger amount.

(ii) The Total sum shared

(c) (i) The simple interest on $30,000 for 6 years is $6200. Calculate the rate percent per annum.

(ii) The simple interest on a sum of money invested at 12% per annum for 4 years was $159. Calculate the sum of money invested.

(iii) Mr. Jack Hammer deposited $80 000 in the bank and earned simple interest of 3.5% for 6 years. Calculate the amount he will receive at the end of the six year period.

7 (a) Simplify the following expressions.

$$2x^2 \times 6xy \times 8x^2 y$$

(b) $\dfrac{a^5}{2a^3 \times 10a^4}$

(c) $18a + 24b - 18c + 14b - 8a + 6c$

(d) $9(e+f) - 3(e-f)$

8. (a) The hire-purchase price of a living room set is $19,500. A deposit of $1500 is made and the remainder is paid in equal monthly payments of $375.
      i. Calculate the number of monthly payments that must be made
     ii. If the cash price is $16000, express as a percentage of the cash price, the extra cost of buying on hire purchase.

(b). Mr. Lu works for a total of $45 per hour for a 80–hour week.
      i. If Mr. Lu worked only 80 hours during a particular week, what was his wage for the week?
     ii. Mr. Lu' wage for the next week was $4770. If overtime is paid at double time, how many hours overtime did he work?