

FIRST FORM MATHEMATICS
Promotion Examination 2008

V. GRIMES
Harrison College

Time 1 $\frac{1}{4}$ hours

170 Copies

This question paper consists of TWO printed pages.

Write your name clearly on ALL sheets of paper used.

All of the questions are to be attempted.

Calculators are NOT allowed.

All working **MUST** be shown.

Number your answers carefully and do **NOT** do questions beside one another.

The number of marks awarded to each question is indicate in square brackets.

1. a) Express $1\frac{1}{5}$ as a percentage. [2]

b) Express $\frac{9}{8}$ as a decimal. [2]

c) Convert 520 cm to metres. [2]

d) A cuboid has edges 4cm, 5cm and 6cm. Calculate its volume. [2]

2. Evaluate the following

a) $-8 + 3$

b) $-6 \times (-4)$

c) $-12 - 6$

d) $-12 \div 4$

e) $5^2 - 3^2$

f) $7\frac{3}{4} \div 4\frac{1}{8}$

[9]

3. If $a = 1$ and $b = -2$, find the value of $2a - 3b$. [3]

4. Simplify the following as far as possible

a) $6 + 2 \times 3m$

b) $7x - 3y + 2x - y$

c) $3x - (-5x)$

d) $3x \times 4xy$

[9]

5. Nicole is x years younger than Yuri. If Yuri is 27 years old, determine Nicole's age. [1]

6. Raymond is 32 years old and Sheena is 8 years old. Express as a ratio, Raymond's Age to Sheena's age in its simplest form. [2]

7. Solve the following equations for x

a). $x + 8 = 1$

b) $18 - 2x = 6$

c) $19 = 7 + 4x$

[9]

PLEASE TURN OVER

8. Express 2520 as a product of its prime factors. [2]

9. Find: a) the LCM b) the HCF
of 24 and 60 showing all steps of your working. [6]

10. If $P = \{5, 6, 7, 8\}$ and $Q = \{2, 4, 6, 8\}$, find $P \cap Q$. [1]

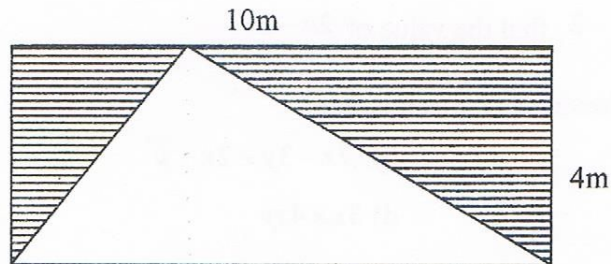
11. $U = \{\text{natural numbers from 1 to 20}\}$, $B = \{\text{factors of 12}\}$ and $C = \{\text{factors of 16}\}$.
a) List the members of sets U , B and C .
b) Draw a Venn diagram to illustrate ALL of the above information.
c) List the members of $B \cup C$. [8]

12. The cost price of an article is \$ 95. In selling the article a shopkeeper made a profit of 20 %. Calculate the selling price of the article. [3]

13. A trader bought 2 dozen eggs for \$ 4.80 and sold them at 30 cents each. Calculate the percentage profit. [4]

14. a) A square has the same area as a rectangle with sides of length 4 cm and 25 cm. Calculate the length of side of the square. [2]

b) Calculate the area of the shaded region in the rectangle below. [3]



15. ABC is an isosceles triangle with $AB = AC$ and angle $ABC = 54^\circ$. The line BC is produced to D , and the line AC is produced to E .

- a) Sketch the diagram
b) Stating all reasons, calculate
i) angle ACB ii) angle BAC iii) angle BCE . [10]

END OF EXAM