

CHUNG CHENG HIGH SCHOOL (MAIN)

Parent's
Signature

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MID YEAR EXAMINATION 2007 SECONDARY 1

Mathematics
Paper 1

Friday, 4 May 2007
1 Hour

Instructions to Candidates:

1. Write your name, class and class register number in the spaces provided on the answer paper.
2. Answer **ALL** the questions.
3. Write in dark blue or black pen. You may use a pencil for any diagrams or graphs.
4. Do not use paper clips, highlighters, glue or correction fluid/tape.
5. When your final answer is non-exact, correct your final answer to 3 significant figures, or 1 decimal place in the case of angles in degrees, and 2 decimal places for money, unless a different level of accuracy is specified in the question.

ADDITIONAL MATERIALS:

- 1 Draft paper (attached)

INFORMATION FOR CANDIDATES:

The number of marks is given in brackets [] at the end of each question or part question.
The total number of marks for this paper is 50.

The use of an electronic calculator is NOT allowed.
You are reminded of the need for clear presentation in your answers.
Omission of essential working will result in loss of marks.

This question paper consists of 8 printed pages (including this cover page)

1

- (a) Express 16.605 as a fraction in its lowest term. [1]
- (b) Express 20 796 grams in kilograms, giving your answer correct to the nearest kilogram. [1]
- (c) Express \$175.85 to the nearest \$10. [1]

Ans: (a) _____

(b) _____ kg

(c) \$ _____

2. (i) Express 74 088 as a product of its prime factors, in index notation form. [2]
- (ii) Hence determine the value of $\sqrt[3]{74\ 088}$. [2]

Ans: (i) _____

(ii) _____

3. Simplify $5\frac{5}{8} - \left(\frac{2}{3}\right)^3 \div \sqrt{\frac{16}{9}}$.

[3]

Ans: _____

4. Find the H.C.F and L.C.M of $2^5 \times 3^2 \times 5^3$ and $2^3 \times 3^4 \times 5^2$. Leave your [2] answers in index notation.

Ans: HCF = _____

LCM = _____

5. Evaluate $\frac{[(56 + 34) \div 5 - 7] \times 3 - 17}{(-2)^2 - (13 - 15)^3}$

[4]

Ans: _____

6. Mrs Tan has a certain amount of money in her cash card which she [4]
uses for payment when she does her shopping. She uses $\frac{5}{12}$ of the
amount to buy a dress. She uses $\frac{1}{3}$ and $\frac{1}{2}$ of the remainder
respectively to buy a handbag and a pair of shoes. She now has \$35
left in her cash card. What is the original amount of money in the
cash card?

Ans: \$ _____

7. Estimate the value of $\frac{7.41 \times \sqrt{895} - 2.04}{6.96^2 + 21.1}$, giving your answer correct to 1 significant figure. [4]

Ans: _____

8. a) Express $\frac{5}{11}$ as a decimal, correcting it to 3 decimal places [2]

Ans: _____

- (b) Evaluate $5.8 \times 0.04 + 0.035 \div \sqrt{0.0049}$ [2]

Ans: _____

9. (a) Solve the equation $6x + 5 = 2x - 10$

[2]

Ans: $x =$ _____

(b) Solve the equation $\frac{x-4}{3} - 4 = \frac{7x}{2}$

[3]

Ans: $x =$ _____

10. Factorise completely $3ac - 4bc - 6ad + 8bd$

[3]

Ans: _____

11. The product of two consecutive numbers is 20 more than the square [4]
of the smaller number, find the two numbers.

Ans: _____ and _____

12. Look at this pattern

$$1^2 - 0^2 = 1$$

$$2^2 - 1^2 = 3$$

$$3^2 - 2^2 = 5$$

$$4^2 - 3^2 = 7$$

⋮ ⋮ ⋮
⋮ ⋮ ⋮
⋮ ⋮ ⋮

- (a) Write down the 9th line of the pattern. [1]

Ans: _____

- (b) Use the pattern to find

(i) $340^2 - 339^2$ [1]

Ans: _____

- (ii) The integers x and y such that $x^2 - y^2 = 801$ [1]

Ans: $x =$ _____, $y =$ _____

13. If $a = 6$, $b = -5$ and $c = 10$, find the value of

(i) $3a - (b^2 + 4c)$

[2]

(ii) $\frac{a}{b} + \frac{c}{b^3 + c^2}$

[2]

Ans: (i) _____

(ii) _____

14. (a) Simplify $7a^2 - 4a + 6b - 3a - 2a^2 - b$

[1]

Ans: _____

(b) Simplify $5x(3x + 2y) - y(12x + y)$

[2]

Ans: _____

End of Paper 1

Answers to MYE Sec 2 Paper 1

1. (a) $16\frac{121}{200}$ (b) 21 kg (c) \$10

2. (i) $2^3 \times 3^3 \times 7^3$ (ii) 42

3. $5\frac{29}{72}$

4. HCF = $2^3 \times 3^2 \times 5^2$ LCM = $2^5 \times 3^4 \times 5^3$

5. $1\frac{1}{3}$

6. \$360

7. 3

8. (a) 0.455 (b) 0.732

9. (a) $-3\frac{3}{4}$ (b) $-1\frac{13}{19}$

10. $(3a - 4b)(c - 2d)$

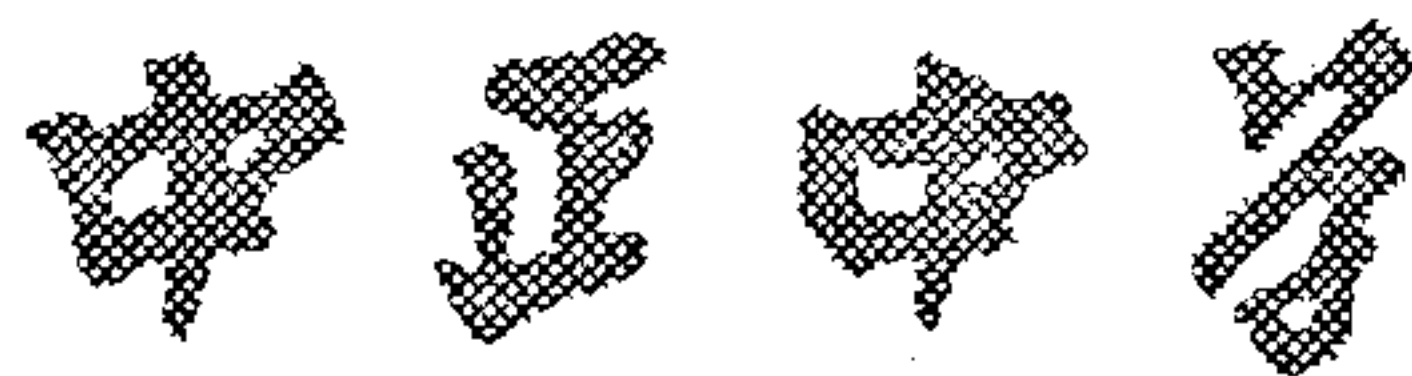
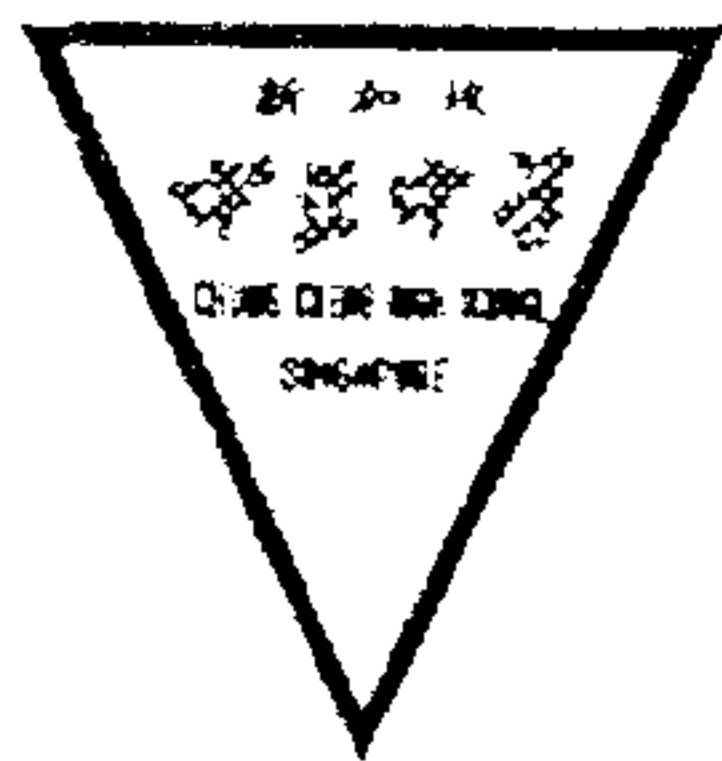
11. 20 and 21

12. (a) $9^3 - 8^2 = 17$ (b) 679 (c) $x = 401, y = 400$

13. (i) -47 (ii) $-1\frac{3}{5}$

14. (a) $5a^2 - 7a + 5b$ (b) $15x^2 - 2xy - y^2$

Name:	Class: Sec	Class Register No:
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(MAIN)**

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Signature

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**MID-YEAR EXAMINATION 2007
SECONDARY 1**

**Mathematics
Paper 2**

**Wednesday, 9 May 2007
1 hour 30 min**

Instructions to Candidates:

1. Write your name, class and index number in the space provided on the cover page of this booklet.
2. All answers are to be written on the question paper in the space provided.
3. If you use more paper than the booklet, fasten the sheets together.
4. If working is needed for any question, it must be shown clearly in the space provided for that question.
5. Workings must be shown clearly in blue or black ink.
6. Diagrams are to be drawn neatly and clearly in pencil.

OMISSION OF ESSENTIAL WORKINGS WILL RESULT IN LOSS OF MARKS.

Additional Materials:

1 Draft Paper

Information For Candidates:

CALCULATORS AND MATHEMATICAL TABLES ARE ALLOWED FOR THIS PAPER BUT ALL ESSENTIAL WORKINGS MUST STILL BE SHOWN.

The intended marks for the question or parts of the question are given in brackets [].
The total number of marks for this paper is 50.

You are reminded of the need for clear presentation in your answers.

This question paper consists of 8 printed pages (including this cover page).

DO NOT TURN OVER UNTIL YOU ARE TOLD TO DO SO!

Answer all the questions in this paper.

1. (a) Arrange the following numbers in descending order.

$$\frac{3}{4}, \sqrt[3]{-0.343}, 0.7\dot{7}6, \sqrt{\frac{49}{81}}, -0.\dot{7}$$

Ans: (a) _____ [3]

- (b) Draw a number line to represent real numbers that is $> |-0.5|$ but $\leq \sqrt[3]{216}$. [3]

- (c) List the whole numbers between $\sqrt[3]{200}$ and $\sqrt{87}$. [2]

Ans: (c) _____ [2]

3. Use a calculator to evaluate the following :

(a) $(-9.7)^{\frac{1}{3}} \times \left[\frac{31}{\sqrt{77}} - \left(\frac{-2\frac{1}{2}}{0.00325} \right)^2 \right]$, correct to 3 significant figures.

2. Evaluate $\frac{1}{3}$, showing your workings clearly.

(b) $\frac{0.17^{\frac{3}{5}}}{16} \sqrt{3.481} + \frac{4}{1}$ giving your answer correct to 3 significant figures.

(c) $-6\frac{7}{12} + (-39.8901) + 0.72^2 \times \sqrt{\frac{64}{49}} \div \frac{2}{19}$, correct to 3 decimal places.

Ans: (a) _____ [1]

(b) _____ [1]

(c) _____ [1]

Ans: _____ [3]

4. Mrs Tan has a bag containing more than 100 sweets. She found out that if she give her students 6, 8 or 9 sweets each, there will not be any remaining sweets left in each case. What is the smallest total number of sweets in the bag?

Ans: _____ sweets [3]

5. In a student leader election, there were 3 candidates. Andy, Ben and Charles. Andy received $\frac{1}{4}$ of the votes and Ben received $\frac{1}{3}$ of the votes. Charles received $\frac{9}{10}$ of the remaining votes. The rest were spoilt votes.
- (i) What fraction of votes did Charles receive?
- (ii) If there were 7 spoilt votes, what was the total number of votes cast?

[Do NOT use model method]

Ans: (i) _____ [1]

(ii) _____ votes [2]

9. Solve the following equations :

(a) $2 + \frac{5}{7}w = 1\frac{1}{4}$;

(b) $3(m + 4) = 2(1 - m)$

Ans: (a) $w =$ _____ [1]

(b) $m =$ _____ [3]

10. Express $\frac{2(x-4)}{3} + \frac{3-5x}{2} - \frac{(4x-1)}{5}$ as a single algebraic fraction in the simplest form.

Ans: _____ [3]

11. (a) Given $\frac{1}{a} + \frac{1}{b} - \frac{1}{c} = \frac{1}{h}$, find the value of h when $a=3$, $b=13$ and $c=-4$.
Express your answer in fractional form, showing your workings clearly.

- (b) If $x=3$, $y=-2$ and $g=5$, find the value of

(i) $x^y - g^x + y^x$;

(ii) $\frac{x^2 - y^2}{g^2} - \frac{x^3 - g}{(g - 3y)}$

Ans: (a) $h =$ _____ [3]

(bi) _____ [2]

(bii) _____ [3]

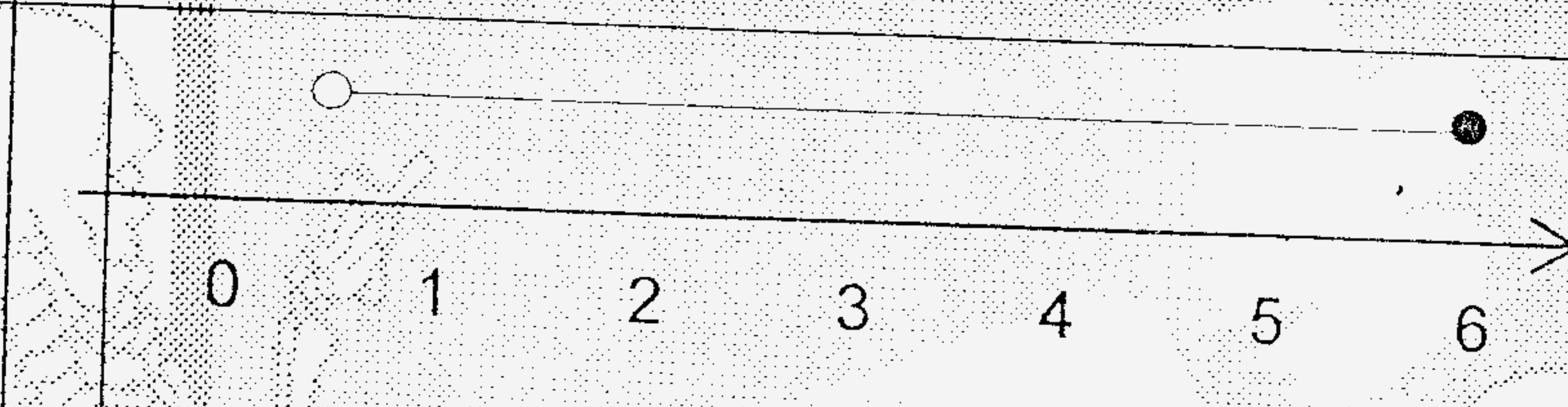
12. (a) Elaine's brother, David is four years older than her. Their mother is three times as old as David. If Elaine is n years old, write down algebraic expressions, in terms of n for

- (i) David's age,
 (ii) Their mother's age.

- (b) [Solve the question below using algebraic method ONLY].

The entrance fee to the zoo during a promotional period was \$ 6.75 for an adult and \$3.25 per child. Mr Goh and his wife took all his little nieces and nephews to the zoo and paid a total of \$ 36.25. How many children did they bring to the zoo in all ?

Ans : (ai) _____ years old [1]

Qn No	Answer for Chung Cheng High School (Main) Sec 1 MYE P2 2007
1a	$\sqrt{\frac{49}{81}}, 0.77\dot{6}, \frac{3}{4}, \sqrt[3]{-0.343}, -0.\dot{7}$
1b	
1c	6, 7, 8 and 9
2	$\begin{array}{r} 64 \\ \hline 12025 \end{array}$
3a	-12.6
3b	0.222
3c	-40.845
4	144 sweets
5i	$\frac{3}{8}$
5ii	168 votes
6a	66 (top answer) 15 (bottom left answer) 9 (Bottom right answer)
6b	$\frac{1}{121}, \frac{1}{1331}$
7	$32a - 26b$

8	$3cd(7g - 15h)$
9a	$w = -1\frac{1}{20}$
9b	$m = -2$
10	$\frac{-79x - 29}{30}$
11a	$h = 1\frac{53}{103}$
11bi	$-132\frac{8}{9}$
11bii	$-1\frac{4}{5}$
12ai	$(n + 4)$ years old
12aii	$(3n + 12)$ years old
12b	7 children