J. J. CAHILL H.S

All Year 9 Students
Half Yearly Exam 2011
Section 1 – Non Calculator

Question	Answer
1. 600 x 40 =	
2. Write 2.74 as a percentage	
3. Find 7% of $900	
4. Write a fraction that is between $\frac{1}{8}$ and $\frac{1}{2}$ (Hint: Write each fraction with the same denominator)	
5. Which of the following is equal to forty? A. 11 + 9 x 2 B. 4 x 9 + 2^2 C. 40 ÷ 4 x 2 D. 18 x (2 + 4)	
6. Find the value of $\frac{2}{5}+\frac{1}{3}$	
7. Between which two consecutive numbers does $\sqrt{102}$ lie?	
8. A number rounded to 13.7 could have been A. 13.64 B. 13.76 C. 13.69 D. 14.0	
9. Given that 62.4 x 1.9 = 118.56, what is the value of 0.624 x 19 ?	
10. Find the value of [(18 + 12) + 3 x 4] ÷ 2	
11. Simplify 6a x 2b	

Question	Answer
12. Look carefully at the pattern in the table. Use the pronumerals given to complete the formula relating y to x.	Y = ___ X + ___

X	3	4	5	6	9
Y	17	22	27	32	47

13. Evaluate $\sqrt{10^2 - 8^2}$

14. Write the decimal represented by the point P (Hint: Answer with three decimal places)

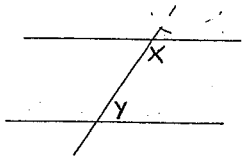
4.0 P 4.1

15. Kylie watches a movie that lasts for 125 minutes. If it finishes at 9:45 pm, at what time did it start?

16. Give possible dimensions of a rectangle that would have a perimeter of 24cm. (Hint: Draw a diagram)

17. In the diagram, angles X and Y are:

A. Equal B. Corresponding C. Co-interior D. Alternate



18. 0.12 – 0.1 =

19. What is the median of 9, 15, 12, 9, 20 ?

20. How many minutes in $\frac{5}{6}$ of one hour?

Year 9
Stage 5.3 Pathway
9Ma1

Half Yearly Examination
Mathematics

2011

SECTION 2

Time: 70 minutes

Directions

- Calculators may be used in this examination
- Questions are not of equal value
- Answer questions in the spaces provided

Name: _____

Rational Numbers	Consumer Arithmetic	Measurement	Data Representation & Analysis	Indices	Total
/9	/10	/11	/12	/12	/54

Section 2

Rational Numbers (Total 9 Marks)

1. Evaluate (a) $0.000\,32 \times 100 =$ (2 marks)

(b) $3 \div 1000 =$

2. State the number of significant figures in 21.05006 (1 mark)

3. Write as a recurring decimal 5.918 181 ... (1 mark)

4. The scores of the top ten golfers in a tournament were recorded as: (1 mark)

-9, -5, -5, -4, -2, -1, -1, +1, +2, +4
What was the average of the ten scores?

5. Write 36.73602 correct to three significant figures. (1 mark)

6. Write as a numeral 2.7938×10^4. (1 mark)

7. Evaluate $\frac{\sqrt{135}+18.7}{11-\pi}$, answer correct to 1 decimal place. (1 mark)

8. Convert the recurring decimal to a fraction in simplest form (1 mark)

$0.\dot{3}$

Consumer Arithmetic (Total 10 Marks)

1. Sandy is paid $21.40 per hour.
How much will she be paid for 7 hours work? (1 mark)

2. At the end of last year Sam was paid $500 per week. Now he is paid $650 per week. (1 mark)
What has been the percentage increase in his wage?

3. Danielle is paid $314 per week plus 5 % of sales totalling $6400. (1 mark)
Calculate Danielle's total pay for the week.

4. Arnold is an electrician who has worked 40 hours at the normal rate of $15.90 per hour and 6 hours overtime at the time-and-a-half rate. Find his total wage for the week. (1 mark)

5. Penny receives a gross fortnightly wage of $1699 and her fortnightly deductions total $579. Find her net monthly wage. (1 mark)

6. Jemima has an annual salary of $45 075. She has allowable tax deductions totaling $3085. (2 marks)

(a) Calculate her taxable income

(b) How much tax is she required to pay if her rate of taxation is
$2380 + 30 cents for each $1 over $20 000

7. Kereem's weekly budget is shown below. He spends 30% of his net income on food and board. (3 marks)
(a) What is Kereem's net weekly income?

(b) He budgets $10 more per week for entertainment than for his university expenses.
How much does he budget for each item? Complete his budget:

Food and board	$105
Entertainment	
Uni. Expenses	
Petrol	$40
Clothes	$45
Savings	$70

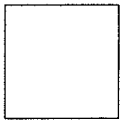
Measurement (Total 11 Marks)

1. Complete each conversion
(i) 450ml = _____ L (ii) 3.67ha = _____ m^2 (iii) 2.5kg = _____ mg (3 mark)

2. Calculate the time difference between 10:25pm Sunday and 8:45am Monday (1 mark)

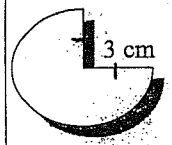
3. The size of a television screen is quoted as being 81cm, between what limits does the actual size lie? (1 mark)

4. Find the value of X for the square below, correct to 1 decimal place if it's area is $21cm^2$. (1 mark)

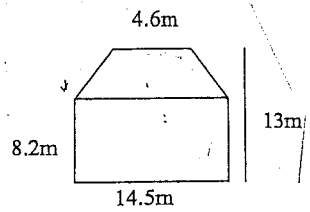


5. A frame 2.5cm wide is made to surround a print measuring 45cm by 22cm. (1 mark)
Find the perimeter of the framed print. (Hint: draw a diagram)

6. Calculate the (i) perimeter of this shape and (ii) area of this shape, correct to 1 decimal place. (2 marks)



7. Calculate the area of this shape, to the nearest square metre. (2 marks)



Data (Total 12 Marks)

1. For the set of scores 26, 11, 26, 4, 11, 12, 11. Find the: (4 marks)

(i) mean (ii) mode (iii) median (iv) range

2. Use this stem and leaf plot to answer the following questions. (3 marks)

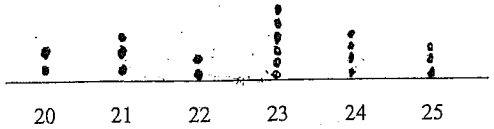
Stem	Leaf
0	7789
1	3445666889
2	0012233457789
3	1144469

(i) How many scores have been recorded ?

(ii) What is the median score?

(iii) What is the modal score?

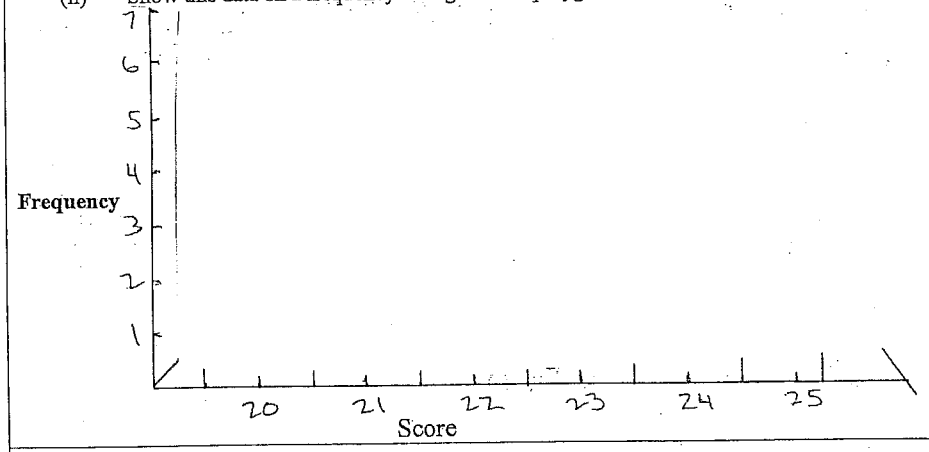
3. Use this dot plot to answer the following questions. (3 marks)



(i) Complete the frequency distribution table using the data in the dot plot

Score	20	21	22	23	24	25
Frequency						

(ii) Show this data on a frequency histogram and polygon.



4. At a city high school, each student in Year 9 had to choose an elective subject. The table below shows the number of students who chose each elective. (2 marks)
Draw a divided bar graph to represent this information, use a scale of 1cm = 10 people.

Elective	Greek	Metal tech.	Info tech.	Hospitality
Number of students	20	25	40	15

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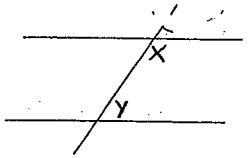
17. In the diagram, angles X and Y are: A. Equal B. Corresponding C. Co-interior D. Alternate 	
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Indices Test. Stage 5.3, Outcome: PAS 5.1.1, PAS 5.2.1
(Total 12 Marks, 1 Mark each)

1. Express in simplest index form
   a. $4 \times 4 \times 4 \times 4 \times 4$ ___ b. $3 \times h \times 5 \times p \times h$

2. Write in expanded form $7y^2 - 2d^4$

3. Simplify:
   a. $k^4 \times k^8$ b. $5p^2 \times -3^5$ c. $21c^9 \div 7c^5$

   d. $\frac{36z^{12}}{6z^8}$ e. $(h^2)^4$ f. $(4p^5)^2$

   g. $\frac{9d^{10} \times (2d^3)^3}{12d^{15}}$ h. $10x^0$ i. $(4x^3)^0$