

**IGCSE Mathematics**

**Paper 4**

**Unsolved Topical**

**Past Papers with Answer Key**

**All Variants**

**2014-2021**

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## PREFACE

Excellence in learning cannot be claimed without application of concepts in a dexterous way. In this regard one of the logical approach is to start in chunks; like chapter wise learning and applying the concept on exam based questions.

This booklet provides an opportunity to candidates to practice topic wise questions from previous years to the latest. Extensive working of Team MS Books has tried to take this booklet to perfection by collaborating with top of the line teachers.

We have added answer key / marks scheme at the end of each topic for the candidate to compare the his/her answer to the best.

MS Books strives to maintain actual spacing between consecutive questions and within options as per CAIE format which gives students a more realistic feel of attempting question.

Review, feedback and contribution in this booklet by various competent teachers of a subject belonging to renowned school chains make it most valuable resource and tool for both teachers and students.

With all belief in strength of this resource material I can confidently claim that it is worth in achieving brilliance.

Our sincere thanks and gratification to **Mr. Zafar Iqbal** who took out special time to help compile and manage this booklet. We would also like to appreciate Mathematics faculty for reviewing and indorsing it.

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## **CONTENT TABLE**

<b>Sr #</b>	<b>Topics</b>	<b>Pg #</b>
<b>1.</b>	<b>Numbers</b>	<b>7</b>
<b>1.2</b>	<b>Sets</b>	<b>69</b>
<b>1.6</b>	<b>Inequalities</b>	<b>82</b>
<b>1.7</b>	<b>Indices</b>	<b>88</b>
<b>2</b>	<b>Algebra</b>	<b>90</b>
<b>2.2</b>	<b>Directed Numbers</b>	<b>171</b>
<b>2.6</b>	<b>Linear Programming</b>	<b>174</b>
<b>2.7</b>	<b>Sequence</b>	<b>183</b>
<b>2.8</b>	<b>Variation</b>	<b>205</b>
<b>2.9</b>	<b>Graphs in a Practical Situation</b>	<b>211</b>
<b>2.10</b>	<b>Graphs Function</b>	<b>222</b>
<b>2.11</b>	<b>Exponential Graphs</b>	<b>291</b>
<b>2.12</b>	<b>Function &amp; Composite Functions</b>	<b>298</b>
<b>2.13</b>	<b>Derivation</b>	<b>332</b>
<b>3.</b>	<b>Geometry</b>	<b>338</b>
<b>3.6</b>	<b>Angles</b>	<b>359</b>
<b>3.7</b>	<b>Loci</b>	<b>389</b>
<b>4.</b>	<b>Menstruation</b>	<b>398</b>
<b>4.2</b>	<b>Construction</b>	<b>455</b>
<b>5.</b>	<b>Co-ordinate Geometry</b>	<b>458</b>
<b>6.</b>	<b>Trigonometry</b>	<b>483</b>
<b>6.3</b>	<b>Sketch Graph</b>	<b>553</b>
<b>7.</b>	<b>Matrices, Transformation &amp; Vectors</b>	<b>557</b>
<b>7.3</b>	<b>Vectors</b>	<b>560</b>
<b>7.4</b>	<b>Matrix</b>	<b>587</b>
<b>7.5</b>	<b>Transformation</b>	<b>592</b>
<b>8.</b>	<b>Probability</b>	<b>631</b>
<b>9.</b>	<b>Statistics</b>	<b>666</b>
<b>9.5</b>	<b>Cumulative Frequency</b>	<b>714</b>
<b>9.6</b>	<b>Correlation a Scatter Diagrams</b>	<b>739</b>

Numbers

Q3/41/M/J/14

- 1 (a) The running costs for a papermill are \$75 246.  
This amount is divided in the ratio labour costs : materials = 5 : 1.

Calculate the labour costs.

Answer(a) \$ ..... [2]

- (b) In 2012 the company made a profit of \$135 890.  
In 2013 the profit was \$150 675.

Calculate the percentage increase in the profit from 2012 to 2013.

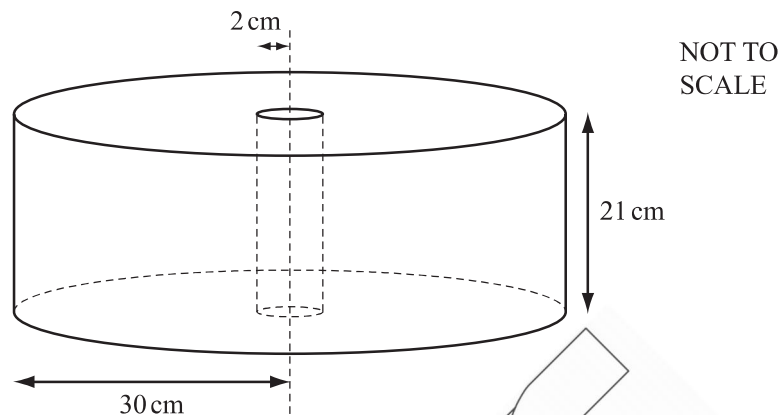
Answer(b) ..... % [3]

- (c) The profit of \$135 890 in 2012 was an increase of 7% on the profit in 2011.

Calculate the profit in 2011.

Answer(c) \$ ..... [3]

- (d)



Paper is sold in cylindrical rolls.  
There is a wooden cylinder of radius 2 cm and height 21 cm in the centre of each roll.  
The outer radius of a roll of paper is 30 cm.

- (i) Calculate the volume of paper in a roll.

Answer(d)(i) ..... cm<sup>3</sup> [3]

- (ii) The paper is cut into sheets which measure 21 cm by 29.7 cm.  
The thickness of each sheet is 0.125 mm.

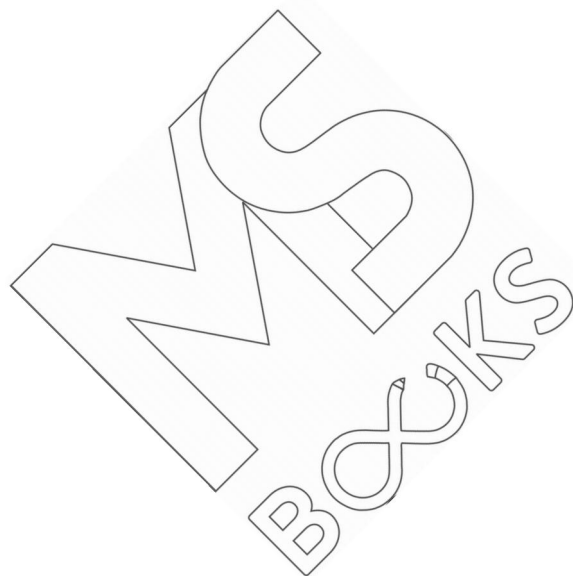
- (a) Change 0.125 millimetres into centimetres.

*Answer(d)(ii)(a)* ..... cm [1]

- (b) Work out how many whole sheets of paper can be cut from a roll.

*Answer(d)(ii)(b)* ..... [4]

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Q1/42/M/J/14

2 Jane and Kate share \$240 in the ratio 5 : 7 .

(a) Show that Kate receives \$140.

*Answer(a)*

[2]

(b) Jane and Kate each spend \$20.

Find the new ratio Jane's remaining money : Kate's remaining money.  
Give your answer in its simplest form.

*Answer(b)* ..... : ..... [2]

(c) Kate invests \$120 for 5 years at 4% per year simple interest.

Calculate the total amount Kate has after 5 years.

*Answer(c)* \$ ..... [3]

(d) Jane invests \$80 for 3 years at 4% per year compound interest.

Calculate the total amount Jane has after 3 years.  
Give your answer correct to the nearest cent.

*Answer(d)* \$ ..... [3]

(e) An investment of \$200 for 2 years at 4% per year compound interest is the same as an investment of \$200 for 2 years at  $r\%$  per year simple interest.

Find the value of  $r$ .

*Answer(e)*  $r =$  ..... [3]

Q1(a)/41/O/N/14

- 3 (a) A company makes compost by mixing loam, sand and coir in the following ratio.

$$\text{loam} : \text{sand} : \text{coir} = 7 : 2 : 3$$

- (i) How much loam is there in a 72 litre bag of the compost?

*Answer(a)(i)* ..... litres [2]

- (ii) In a small bag of the compost there are 13.5 litres of coir.

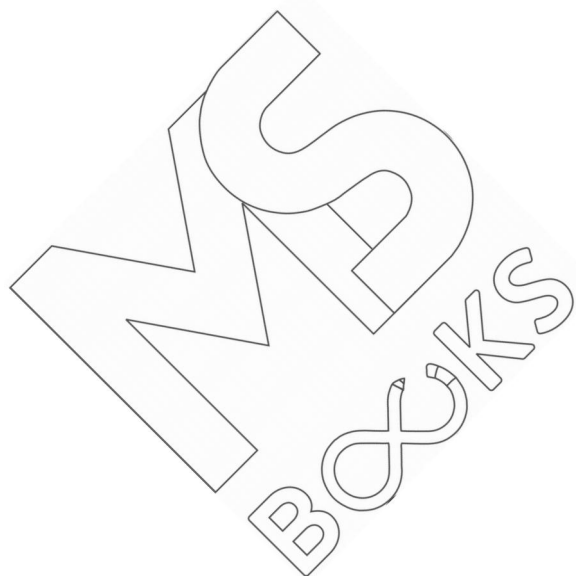
How much compost is in a small bag?

*Answer(a)(ii)* ..... litres [2]

- (iii) The price of a large bag of compost is \$8.40 .  
This is an increase of 12% on the price last year.

Calculate the price last year.

*Answer(a)(iii)* \$ ..... [3]





Q1/42/O/N/14

- 4 (a) Alfonso has \$75 to spend on the internet.  
He spends some of the money on music, films and books.

- (i) The money he spends on music, films and books is in the ratio

$$\text{music : films : books} = 5 : 3 : 7.$$

He spends \$16.50 on music.

Calculate the **total** amount he spends on music, films and books.

Answer(a)(i) \$ ..... [3]

- (ii) Find this total amount as a percentage of the \$75.

Answer(a)(ii) ..... % [1]

- (b) The download times for the music, films and books are in the ratio

$$\text{music : films : books} = 2 : 9 : 1.$$

The **total** download time is 3 hours and 33 minutes.

Calculate the download time for the films.

Give your answer in hours, minutes and seconds.

Answer(b) ..... hours ..... minutes ..... seconds [3]

- (c) The cost of \$16.50 for the music was a reduction of 12% on the original cost.

Calculate the original cost of the music.

Answer(c) \$ ..... [3]

Q1/41/M/J/15

- 5 12 000 vehicles drive through a road toll on one day.  
The ratio cars : trucks : motorcycles = 13 : 8 : 3.

- (a) (i) Show that 6500 cars drive through the road toll on that day.

*Answer(a)(i)*

[1]

- (ii) Calculate the number of trucks that drive through the road toll on that day.

*Answer(a)(ii)* ..... [1]

- (b) The toll charges in 2014 are shown in the table.

Vehicle	Charge
Cars	\$2
Trucks	\$5
Motorcycles	\$1

Show that the total amount paid in tolls on that day is \$34 500.

*Answer(b)*

[2]

- (c) This total amount is a decrease of 8% on the total amount paid on the same day in 2013.

Calculate the total amount paid on that day in 2013.

*Answer(c)* \$..... [3]

- (d) 2750 of the 6500 car drivers pay their toll using a credit card.

Write down, in its simplest terms, the fraction of car drivers who pay using a credit card.

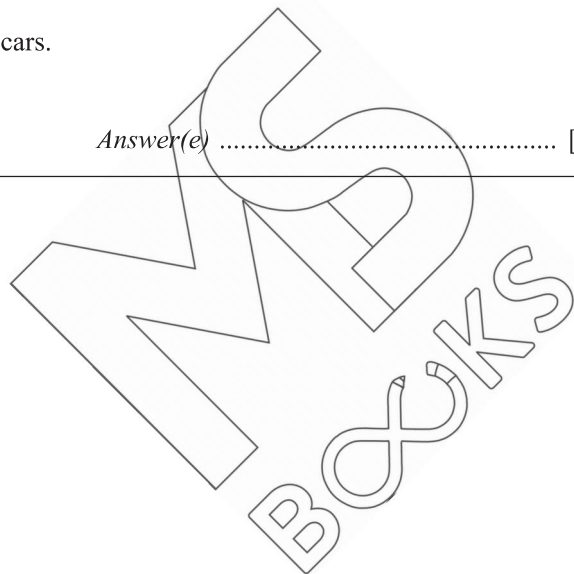
*Answer(d)* ..... [2]

- (e) To the nearest thousand, 90 000 cars drive through the road toll in one week.

Write down the lower bound for this number of cars.

*Answer(e)* ..... [1]

---



Q3/41/M/J/14

**Question 1**

Answers: (a) 62705 (b) 10.9 (c) 127000 (d)(i) 59100 (ii)(a) 0.0125 (ii)(b) 7580

Q1/42/M/J/14

**Question 2**

Answers: (b) 2 : 3 (c) 144 (d) 89.99 (e) 4.08

Q1(a)/41/O/N/14

**Question 3**

Answers: (a)(i) 42 (a)(ii) 54 (a)(iii) 7.50

Q1/42/O/N/14

**Question 4**

Answers: (a)(i) 49.5(0) (a)(ii) 66 (b) 2 hours 39 minutes 45 seconds (c) 18.75

Q1/41/M/J/15

**Question 5**

Answers: (a)(ii) 4000 (c) 37 500 (d)  $\frac{11}{26}$  (e) 89 500

Q1/42/M/J/15

**Question 6**

Answers: (a) 1848 (b)(i) 1750, (ii) 64.3 (c)(i) 33 : 20 (ii) 236 (d) 17

Q1/41/O/N/15

**Question 7**

Answers: (a) 6 (b) 21.45 (c) 16.50 (d) 1.34 (e)(i) 750 (ii) 4.7 (iii) 6 (f) 8950 (g) 210  
(h) 160 000

Q1/42/O/N/15

**Question 8**

Answers: (a)(ii) 112 (b) 10 100 (c) 19 (d)(i) 4 093 000 (ii)  $4.093 \times 10^6$  (e) 198

Q1/41/M/J/16

**Question 9**

Answers: (a)(i) 48 (ii) 32.40 (iii)  $\frac{13}{30}$  (iv) 24 (b) 660 (c) 663.90 (d) 1.5

Q1/42/M/J/16

**Question 10**

Answers: (a)(i) 1245 (ii) 788 (b)(i) 4230 (ii) 22.2 (c)(i) 3808 (ii) 800 (d)(i) 1130 (ii) 146.90

Q1/41/O/N/16

**Question 11**

Answers: (a)(i) 60 and 45 (ii) 117.6 (iii) 125 (b) 30.68 (c) 480 (d) 6.5

Q1/42/O/N/16

**Question 12**

Answers: (a)(i) 11 054.25 (ii) 16 500 (b) 260 (c)(i) 6.18 (ii) 6