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3

Answer all the questions

- 1 (a) The ratio of apples to pears in a fruit basket is 2 : 3.
What is the percentage of apples in the basket?

Answer (a) % [1]

- (b) Express the ratio 30 seconds : 3 minutes 20 seconds in its simplest form.

Answer (a) [1]

- 2 Jane chooses from a box either blue, green or red marbles.
The probability that she chooses a blue marble is 0.35.
The probability that she chooses a green marble is 0.5.

Find the probability that

- (a) she chooses a red marble,

Answer (a) [1]

- (b) she does not choose a green marble.

Answer (b) [1]

Turn over

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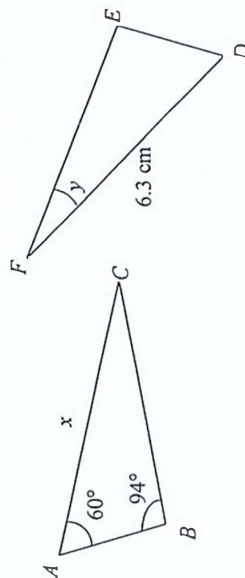
- 3 By writing each number correct to 1 significant figure, estimate the value of

$$\frac{611.95 + 49.83}{9.89}$$

You must show your working.

Answer [2]

- 4 In the diagram below, $\triangle ABC$ is congruent to $\triangle DEF$.



- (a) Find x .

Answer (a) $x =$ cm [1]

- (b) Find y .

Answer (b) $y =$ [1]

5

- 5 A line passes through the points $(2, -8)$ and $(-1, -32)$.
Find the distance between the two points.

Answer units [2]

- 6 (a) Given that $x = 1 + 2y^2$, find x when $y = -3$.

Answer (a) $x =$ [1]

- (b) Given that $y = 3(2a - b)$, express b in terms of a and y .

Answer (b) [2]

[Turn over

6

- 7 (a) Simplify $-2(4x - 3) + 9x$.

Answer (a) [1]

- (b) Solve $\frac{4}{2x - 5} = 5$.

Answer (b) $x =$ [2]

- 8 (a) Express 324 as a product of its prime factors.

Answer (a) [1]

- (b) Find the lowest common multiple of 168 and 324.

Answer (b) [2]

12

The total number of residents living in Country A is 4.6×10^6 . In 2014, the average income of a resident in Country A is \$500.

- (a) Calculate the total income of the residents in Country A. Leave your answer in standard form.

Answer (a) \$ [1]

- (b) In 2015, 2.6×10^4 people were added to Country A. Calculate the total population in Country A in 2015. Leave your answer in standard form.

Answer (b) [1]

- (c) In February 2015, one-fifth of the population in Country A was infected with flu virus. Calculate the number of people infected.

Answer (c) [1]

13

Given that the exterior angles of a pentagon are $2x^\circ$, $3x^\circ$, $3x^\circ$, $3x^\circ$ and $4x^\circ$.

Calculate

- (a) the value of x .

Answer (a) [2]

- (b) the smallest interior angle of the pentagon.

Answer (b) [1]

[Turn over

14

A map of Singapore is drawn to the scale of 1 : 200.

- (a) The length of a road on the plan is 7 cm.

Find the actual length of the road in metres.

Answer (a) m [1]

- (b) The actual area of one of the ponds in Singapore is 81 m^2 .

Work out the area, in cm^2 , of the pond on the map.

Answer (b) cm^2 [2]

15

- (a) Factorise $9x^2 - 16$

Answer (a) [1]

- (b) (i) Factorise $3x^2 + x - 10$.

Answer (b)(i) [1]

- (ii) Hence, solve $3x^2 + x = 10$.

Answer (b)(ii) [1]

James is the owner of a company that sells Apple products.

- (a) The cost price of an Apple laptop was \$800.
James sold it to a customer at a profit of 35%.
Calculate the selling price of the laptop.

Answer (a) \$ % [2]

- (b) James paid \$550 for an iPad.
At a sale, James sold it at a price of \$400.
Find the loss as a percentage of the cost price.

Answer (b) % [2]

- 17 (a) A van travelled from Pasir Ris to Buona Vista in 45 minutes.
The distance from Pasir Ris to Buona Vista is 36 km.
Calculate the average speed of the van in kilometres per hour.

Answer (a) km/h [1]

- (b) A bus left Jurong at 13 38 and arrived at City Hall at 14 33.
How many minutes did it take for the bus to travel from Jurong to City Hall?

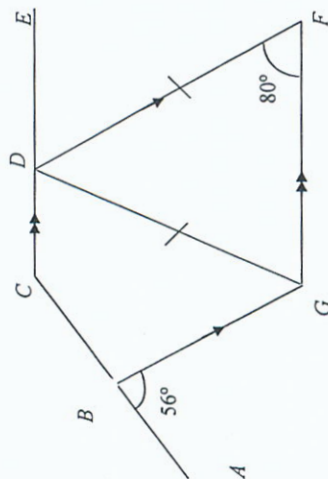
Answer (b) minutes [1]

- (c) A car travelled 90km from Changi to Tanjong Pagar.
It travelled at an average speed of 60km/h.
What time did it arrive at Tanjong Pagar if it left Changi at 14 53?

Answer (c) hr [2]

[Turn over

- 18 In the figure, ABC and CDE are straight lines. BG is parallel to DF , CE is parallel to GF ,
 $\angle ABG = 56^\circ$ and $\angle DFG = 80^\circ$.



Find

- (a) $\angle GBC$,

Answer (a) [1]

- (b) $\angle GDF$,

Answer (b) [1]

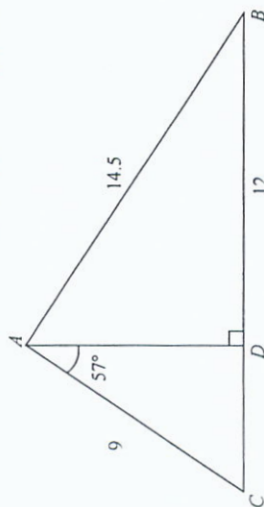
- (c) $\angle EDF$,

Answer (c) [1]

- (d) $\angle BGF$.

Answer (d) [1]

- 19 In the diagram, $\angle ADB = 90^\circ$, $\angle CAD = 57^\circ$, $AB = 14.5$ cm, $AC = 9$ cm and $BD = 12$ cm.



Find

- (a) $\angle ABD$,

Answer (a) [2]

- (b) CD .

Answer (b) cm [2]

- 20 (a) If the general term T_n of a sequence is $\frac{1}{2n+1}$, write down the first 3 terms of the sequence.

Answer (a) [2]

- (b) A sequence is formed by 7, 11, 15, 19,

- (i) Express the n th term of the sequence in terms of n .

Answer (b)(i) [1]

- (ii) Find the 10th term.

Answer (b)(ii) [1]

- (iii) If the k th term of the sequence is 123, find the value of k .

Answer (b)(iii) [1]

[Turn over

- 21 (a) Using compasses and protractor, construct $\triangle ABC$ in which $AB = 8$ cm, $\angle ABC = 110^\circ$ and $BC = 7$ cm. Line AB has been drawn for you.

A B

8 cm

[1]

- (b) Measure and write down the length of AC .

Answer (b) $AC =$ cm [1]

- (c) On the same diagram, construct

- (i) the perpendicular bisector of AB ,

[1]

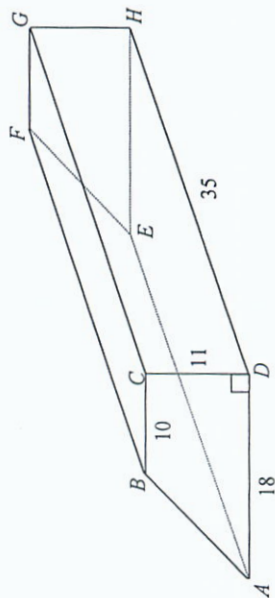
- (ii) the angle bisector of $\angle BAC$.

[1]

- (d) The two lines drawn in part (c) meet at a point P . Measure the distance of PB .

Answer (d) $PB =$ cm [1]

- 22 (a) The diagram shows a box for chocolates in the shape of a solid prism whose cross-section is a trapezium $ABCD$.
 $BC = 10$ cm, $CD = 11$ cm, $AD = 18$ cm and $DH = 35$ cm. BC is parallel to AD .



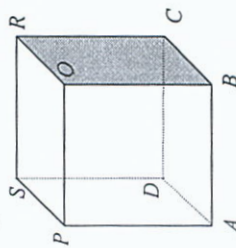
- (i) Find the area of trapezium $ABCD$.

Answer (a)(i) cm^2 [1]

- (ii) Find the volume of the prism.

Answer (a)(ii) cm^3 [1]

- (b) A cuboid has a volume of 240 cm^3 .
 If the area of the rectangular base $ABCD$ is 48 cm^2 ,



- (i) calculate the height of the cuboid,

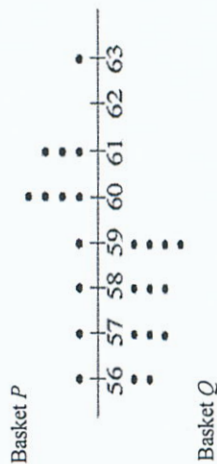
Answer (b)(i) cm [1]

- (ii) If $AB = 6$ cm, calculate the surface area of the cuboid.

Answer (b)(ii) cm^2 [2]

[Turn over

- 23 The masses (in grams) of 12 eggs each in Basket P and Basket Q are presented in the following dot diagram.



- (a) Find the median mass of the eggs in Basket P.

Answer (a) g [1]

- (b) Find the median mass of the eggs in Basket Q.

Answer (b) g [1]

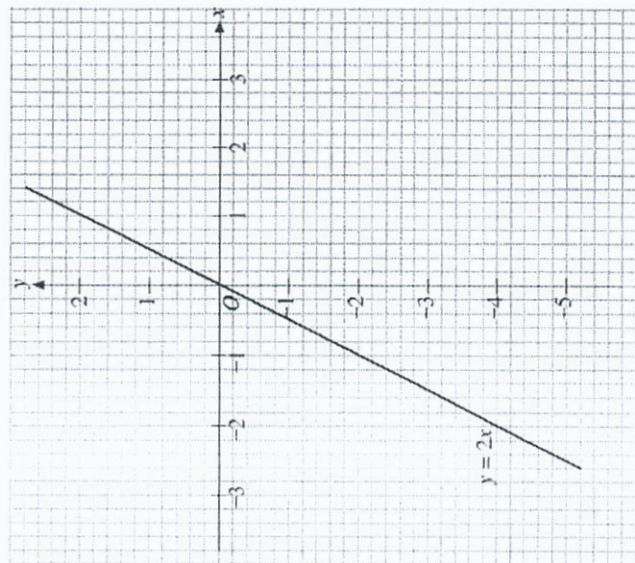
- (c) Write down two comments comparing the mass of the eggs in Basket P and Basket Q

Answer (c) 1

2

..... [2]

- 24 The diagram shows the straight line with equation $y = 2x$.



- (a) Draw on the diagram the straight line with equation $y = 3 - x$. [2]

- (b) Write down the coordinates of A , the point of intersection of $y = 2x$ and $y = 3 - x$.

Answer (b) ... [1]

- (c) On the diagram, draw another straight line with the same gradient as $y = 2x$ and which passes through the point $B(2, 0)$. [1]

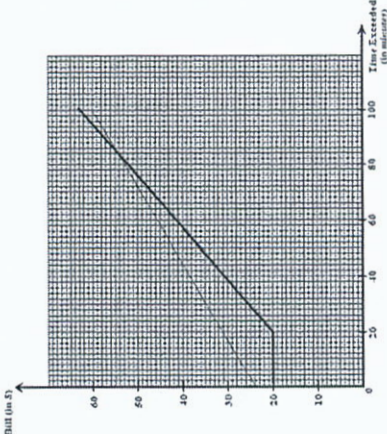
- (d) Find the gradient of the line passing between points $(-1, 1)$ and $(2, -5)$.

Answer (d) ... [1]

End of Paper

LOYANG SECONDARY SCHOOL
MARKING SCHEME - 2015
MATHS SEC 4NA PRELIM P1

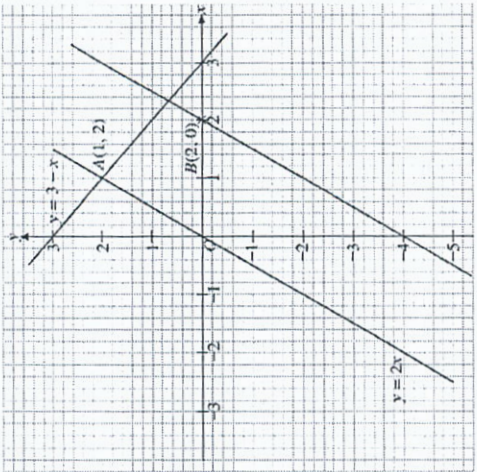
No.	Answer	Marks	Total	Remarks
1(a)	$\frac{2}{5} \times 100\% = 40\%$	A1	2	
(b)	3 : 20	A1		
2(a)	P (red marble) = $1 - 0.35 - 0.5$ = 0.15	A1	2	
(b)	P(not a green marble) = $1 - 0.5$ = 0.5	A1		
3	$\frac{600+50}{10}$ = 65	M1 A1	2	
4(a)	$x = 6.3$ cm	B1	2	
4(b)	$\angle y = 26^\circ$	B1		
5	Distance = $\sqrt{(-8+32)^2 + (2+1)^2}$ = 24.2 units	M1 A1	2	
6(a)	19	A1		
(b)	$y = 6a - 3b$ $3b = 6a - y$ $b = 2a - \frac{1}{3}y$	M1 A1	3	
7(a)	$x + 6$	A1		
(b)	$\frac{4}{2x-5} = 5$ $10x - 25 = 4$ $10x = 29$ $x = 2.9$	M1 A1	3	

8(a)	2 324 2 162 3 81 3 27 3 9 3 3 1				
(b)	$324 = 2^2 \times 3^4$ $168 = 2^3 \times 3 \times 7$ LCM of 168 and $324 = 2^3 \times 3^4 \times 7$ $= 4536$	A1 M1 A1	3		
9(a)	\$40	B1			
(b)	50 mi	B1			
(c)		B1	3		
10					
(a)	$9^{-1}, 9^0, 3^{\frac{2}{3}}, 3^2$	B1			
(b)	$3b^2$	A1	3		
(c)	$x - 1 = 0$ $x = 1$	A1			
11	$x + 3y = -39$ -(1) $5x - 2y = 77$ -(2) From (1), $x = -3y - 39$ -(3) Sub (3) into (2), $5(-3y - 39) - 2y = 77$ $-17y = 272$ $y = -16$	M1 A1	3		

	Sub $y = -16$ into (3), $x = -3(-16) - 39$ $= 9$	A1		
12				
(a)	$4.6 \times 10^6 \times 500 = \2.3×10^9	A1	3	Exact. No marks for 3s.f
(b)	$4.6 \times 10^6 + 2.6 \times 10^4 = 4.626 \times 10^6$	A1		
(c)	$\frac{1}{5} \times 4.626 \times 10^6 = 9.252 \times 10^5$	A1		
13(a)	$2x + 3x + 3x + 4x = 360$ $15x = 360$ $x = 24$	M1		
(b)	84°	A1	3	
14				
(a)	1 cm : 200 cm 1 cm : 2 m Actual length = 7×2 $= 14$ m	A1	3	
(b)	$(1 \text{ cm})^2 : (2 \text{ m})^2$ 1 cm ² : 4 m ² Area of the pond on the map = $\frac{81}{4}$ $= 20.25 \text{ cm}^2$	M1		
15(a)	$(3x - 4)(3x + 4)$	A1		
(b)	$3x^2 + x - 10 = (3x - 5)(x + 2)$	A1	3	
(c)	$(3x - 5)(x + 2) = 0$ $x = -2$ or $\frac{5}{3}$	A1		

16(a)	Cost = $\frac{135}{100} \times 800$ $= \$1080$	M1		
(b)	Percentage = $\frac{550 - 400}{550} \times 100\%$ $= 27.3\%$	A1	4	
17(a)	Ave Speed = $36 \div \frac{45}{60} = 48 \text{ km/h}$	A1		
(b)	55 minutes	A1	4	
(c)	Time taken = $\frac{90}{60} = 1.5 \text{ hrs} = 90 \text{ min}$	M1		
	Time reached = 16 23	A1		
18(a)	$\angle GBC = 180^\circ - 56^\circ = 124^\circ$	A1		
(b)	$\angle GDF = 180^\circ - 80^\circ - 80^\circ = 20^\circ$	A1		
(c)	$\angle EDF = 80^\circ$	A1	4	
(d)	$\angle BGF = 180^\circ - 80^\circ = 100^\circ$	A1		
19(a)	$\cos \angle ABD = \frac{12}{14.5}$ $\angle ABD = \cos^{-1}\left(\frac{12}{14.5}\right)$ $= \angle EDF = 80^\circ$	M1		
19(b)	$\sin 57^\circ = \frac{CD}{9}$ $CD = 9 \times \sin 57^\circ$ $= 7.55 \text{ cm}$	A1	4	

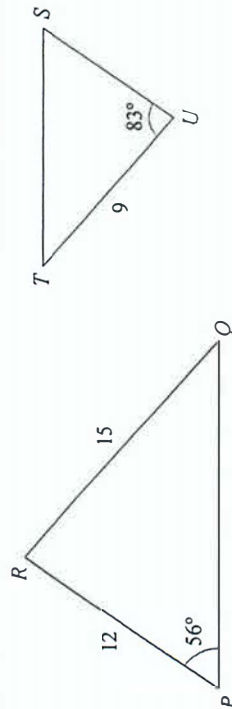
20 (a)	$T_1 = \frac{1}{2(1)+1} = \frac{1}{3}$ $T_2 = \frac{1}{2(2)+1} = \frac{1}{5}$ $T_3 = \frac{1}{2(3)+1} = \frac{1}{7}$ $\frac{1}{3}, \frac{1}{5}, \frac{1}{7}$	M1	
(b)(i)	$T_n = 7 + 4(n-1)$ $= 7 - 4n - 4$ $= 4n + 3$	A1	5
(b)(ii)	$T_{10} = 4(10) + 3$ $= 43$	A1	
(b)(iii)	$T_k = 123$ $4k + 3 = 123$ $4k = 120$ $\therefore k = 30$	A1	
21(a)	See Attached Construction (a) 12.2 cm (c) 4.2 cm		5
22(a)(i)	Area of trapezium = $\frac{1}{2}(10+18) \times 11$ = 154 cm ²	A1	
22(a)(ii)	Volume = 154 × 35 = 5390 cm ³	A1	
22(bi)	$h = \frac{240}{48}$ $= 5$	A1	5
(bii)	$\ell \times b = 48$ $6 \times b = 48$ $b = \frac{48}{6}$ $= 8$	M1	

	Surface Area = $2(6 \times 5 + 5 \times 8 + 6 \times 8)$ = 2(118) = 236 cm ²	A1	
23(a)	60 g	A1	
(b)	58 g	A1	
(c)(i)	The median mass of the eggs in Basket P is higher than Basket Q	A1	4
	The mass of eggs in Basket P is less consistent than Basket Q. / The mass of eggs in Basket Q is more consistent.	A1	
24(a)	See graph	A1	
(b)	Coordinates A (1, 2).	M1	
(c)		A1 A1	5
(d)	(-1, 1) and (2, -5). Gradient = $\frac{-5 - (-1)}{2 - (-1)} = -4$	A1	

Section A (44 marks)

Answer all the questions in this section.

- 1 (a) Evaluate $\frac{\sqrt{6.5 \times 7.4}}{4.5 - 1.08^2}$. Write down all the figures shown on your calculator. [1]
 (b) Give your answer to part (a) correct to 4 significant figures. [1]
- 2 Clare and David share 90 marbles in the ratio 11 : 7.
 (a) Calculate the number of marbles Clare and David each have. [2]
 (b) If each of them are given the same amount of extra marbles, the ratio of the marbles they have become 3 : 2. Find the number of extra marbles each got. [2]



In the diagram above, triangles PQR and STU are similar.
 $PR = 12$ cm, $QR = 15$ cm, $TU = 9$ cm, $\angle RPQ = 56^\circ$ and $\angle SUT = 83^\circ$.

- (a) State the value of $\angle UST$. [1]
 (b) Find $\angle PQR$. [1]
 (c) Calculate the length of SU . [2]
- 4 Given that p is proportional to q^2 and that $p = 500$ when $q = 5$,
 (a) find an equation connecting p and q , [2]
 (b) find the value of p when $q = -2$, [1]
 (c) find the values of q when $p = 5$. [2]

[Turn over

- 5 Ellie has 4 coins in her purse, a 10-cent coin, a 20-cent coin, a 50-cent coin and a 1 dollar coin. Two coins are taken out of the purse, one after another, with replacement.

(a) Copy and complete the following table to show all of Ellie's possible choices.

	10 cent	20 cent	50 cent	1 dollar
10 cent	10 ¢, 10 ¢			
20 cent	20 ¢, 10 ¢			
50 cent	50 ¢, 10 ¢			
1 dollar	\$1, 10 ¢			

- (b) Hence find the probability that Ellie
 (i) takes two coins that are of the same value, [1]
 (ii) takes two coins that have a total value of at least 70 cents. [1]

- 6 Alan wants to buy a car costing \$88 000. The car may be paid for in one of the following ways:

Scheme A: By cash.

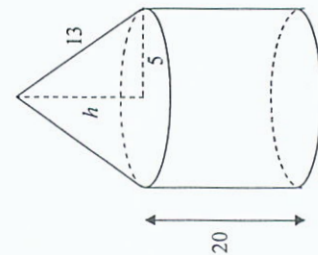
Scheme B: A deposit of 25% of the cost and then monthly instalments of \$1100, over a period of 6 years.

- (a) Calculate the amount that Alan has to pay if he chooses Scheme B. [3]
 (b) Calculate the difference in prices between Scheme A and B as a percentage of the cash price. [2]

- 7 (a) Factorise completely $xy - 2x + 3y - 6$. [2]
 (b) Express $\frac{2}{x} + \frac{1}{x-3}$ as a single fraction. [2]
 (c) Simplify $\frac{2x^3}{9y} + \frac{4}{3xy^2}$. [3]

- 8 A ticket for an adult visiting an exhibition costs x cents. A ticket for a child costs 30 cents less than that of an adult's ticket.

- (a) Write down, in terms of x , the cost in cents of a child's ticket. [1]
 (b) Mr Tan takes his three children to the exhibition. Find, in terms of x , the total cost in cents of the four tickets. [2]
 (c) If Mr Tan pays for the tickets with a \$10 note and receives 90 cents back in change, form an equation in x and solve it to find the cost of a child's ticket, in dollars. [3]



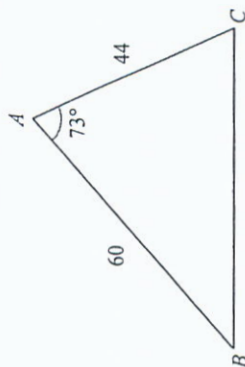
The diagram shows a wooden toy comprising a right circular cone and a cylinder. The cone is of height h cm and radius 5 cm while the cylinder is 20 cm high and has radius 5 cm.

- (a) Given also that the slant height of the cone is 13 cm, find the value of h . [1]
 (b) Hence find the volume of the toy. [3]
 (c) The toy is to be painted using red paint at a cost of \$0.015 per cm^2 . Calculate the cost of painting the entire surface of the toy. [4]

Section B (16 marks)

Answer any two questions from this section. Each question carries 8 marks.

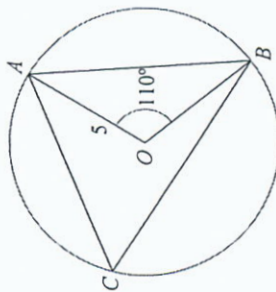
10 (a)



In the diagram, ABC represents a triangular field where $AB = 60$ m, $AC = 44$ m and angle $BAC = 73^\circ$.

- (i) Calculate the length of BC . [2]
 (ii) Calculate the area of the field ABC . [2]

(b)



A , B and C are points on a circle with radius 5 cm and centre O . Angle $AOB = 110^\circ$. Find,

- (i) angle BCA , [1]
 (ii) angle OAB , [1]
 (iii) the length of major arc ACB . [2]

[Turn over

- 11 Answer the whole of this question on a single sheet of graph paper.

A stone is thrown from the edge of a cliff into the sea below. Its position during the flight is represented by the equation $y = -x^2 + 4x + 10$, where y metres is the height of the stone above the sea and x seconds is time recorded after the stone is thrown.

Some corresponding values of x and y are given in the following table.

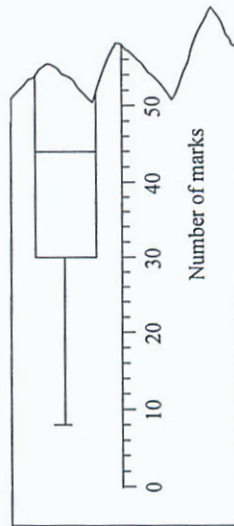
x	0	1	2	3	4	5	6
y	10	p	14	13	10	5	-2

- (a) Calculate the value of p . [1]
- (b) Using a scale of 2 cm to 1 unit, draw a horizontal x -axis for $0 \leq x \leq 6$.
Using a scale of 1 cm to 1 unit, draw a vertical y -axis for $-2 \leq y \leq 14$.
Plot the graph of $y = -x^2 + 4x + 10$ for $0 \leq x \leq 6$. [2]
- (c) Use your graph to find
- (i) the value of y when $x = 4.5$, [1]
- (ii) the value of x when $y = 0$, and hence state what this value of x represents with respect to the flight of the stone. [2]
- (d) By drawing a tangent, find the gradient of the curve $y = -x^2 + 4x + 10$ when $x = 3$. [2]

- 12 (a) The table summarises the marks of 280 students in Success Secondary School in a recent Mathematics examination.

Mark (x)	$0 < x \leq 20$	$20 < x \leq 40$	$40 < x \leq 60$	$60 < x \leq 80$	$80 < x \leq 100$
Frequency	13	56	54	108	49

- (i) Find estimates for the mean and the standard deviation of these marks. [3]
- The same number of students in Victory Secondary School sat for the same examination. The mean mark was 57 and the standard deviation was 21.
- (ii) In which school did the students perform better in the examination? [1]
Give a reason for your answer.
- (iii) In which school did the students perform more consistently in the examination? [1]
Give a reason for your answer.
- (b) The same students in Success Secondary School sat for the Science examination and their results were represented in a box-and-whisker plot. However, part of the paper showing the box-and-whisker plot was torn off, such that the maximum mark and the upper quartile mark could not be seen.



- (i) State the median mark. [1]
- (ii) Given that the range is 80 marks and the interquartile range is 32 marks, write down the maximum mark and the upper quartile mark. [2]

End of Paper

Secondary Four (Normal Academic) Mathematics
Preliminary Examination 2015 Marking Scheme

Q No.	Answer	Marks	Total	Remarks
1a	2.080458469	B1	2	
1b	2.080	B1		
2a	Clare: 55 marbles David: 35 marbles	B1		
2b	Let the number of extra marbles be x . $55 + x = 3$ $35 + x = 2$ $110 + 2x = 105 + 3x$ $x = 5$	B1		
3a	56°	M1	4	
3b	41°	A1		
3c	$\frac{12}{SU} = \frac{15}{9}$ $SU = 7.2$ cm	M1	4	Alt. method by using ratio.
4a	$p = kq^2$ $500 = k(5)^2$ $k = 20$ $p = 20q^2$	A1		
4b	80	M1	5	
4c	$5 = 20q^2$ $q^2 = \frac{1}{4}$ $q = \frac{1}{2}$ or $-\frac{1}{2}$	B1		
5a	10 cent 10 ¢, 10 ¢ 20 cent 20 ¢, 10 ¢ 50 cent 50 ¢, 10 ¢ 1 dollar \$1, 10 ¢	B1	3	
5b	$\frac{1}{4}$	M1		
5bii	$\frac{5}{8}$	A1	3	
6a	Deposit = $88000 \times 25\%$ = \$22000 Total amount = $22000 + 1100 \times 72$ = \$101200	M1 M1 A1		

6b	Percentage difference = $\frac{101200 - 88000}{88000} \times 100$ = 15%	M1 A1	5	
7a	$xy - 2x + 3y - 6 = x(y - 2) + 3(y - 2)$ = $(x + 3)(y - 2)$	M1 A1		
7b	$\frac{2}{x} + \frac{1}{x-3} = \frac{2(x-3) + x}{x(x-3)}$ = $\frac{3x-6}{x(x-3)}$	M1 A1		
7c	$\frac{2x^3}{9y} \div \frac{4}{3xy^2} = \frac{2x^3}{9y} \times \frac{3xy^2}{4}$ = $\frac{x^2y}{6}$	M1 A1, A1	7	A1 for x^2y , A1 for $\frac{1}{6}$
8a	$x - 30$	B1		
8b	$x + 3(x - 30) = 4x - 90$	M1, A1		
8c	$4x - 90 = 910$ $4x = 1000$ $x = 250$ Cost of child's ticket = \$2.20	M1 A1	6	
9a	$h = \sqrt{13^2 - 5^2} = 12$ cm	B1		M1 each for vol of cone and vol of cylinder
9b	Volume = $\frac{1}{3}\pi(s^2)(12) + \pi(s^2)(20)$ = 1880π cm ³ (3 s.f.)	M1, M1 A1		
9c	Total surface area = $\pi(5)(13) + 2\pi(5)(20) + \pi(5^2)$ = 911.0618 cm ² Cost = 911.0618×0.015 = \$13.67 (2 d.p.)	M1, M1 M1 A1	8	M1 for $\pi(5)(13)$ M1 for $2\pi(5)(20)$ M1 for $\pi(5^2)$
10ai	$BC^2 = 60^2 + 44^2 - 2(60)(44)\cos 73$ $BC = 63.2$ m (3 s.f.)	M1 A1		
10a	Area = $\frac{1}{2}(60)(44)\sin 73$ = 1260 m ² (3 s.f.)	M1 A1		
10bi	55°	B1		
10bii	35°	B1		
10biii	Major arc length = $\frac{250}{360} \times 2\pi(5)$ = 21.8 cm	M1 A1	8	
11a	$p = 13$	B1		B1 correct scale/points B1 smooth curve
11b	See graph behind	B2		
11ci	$y = 7.8$	B1		Accept ± 0.2 Accept ± 0.1
11cii	$x = 5.75$. This represents the time at which the stone falls into the sea.	B1, B1		
11d	Draw tangent line at $x = 3$ gradient = -2	M1 A1	8	

12ai	Mean = 58.9 Standard deviation = $\sqrt{\frac{1112800}{280} - \left(\frac{16480}{280}\right)^2}$ = 22.6	B1 M1 A1	Give B2 for standard deviation if no working shown.
12aii	Success Secondary school. The mean mark of the students in Success Secondary is higher than the mean mark of students in Victory Secondary.	B1	
12aiii	Victory Secondary school. The standard deviation of the marks of students in Victory Secondary is lower than the standard deviation of the marks of students in Success Secondary.	B1	
12bi	44 marks	B1	
12bii	Max mark = 88 marks Upper quartile = 62 marks	B1 B1	
		8	