Answer **all** the questions.

1 It is estimated that the population of Asia in 2020 will be 4.58 billion.
Express 4.58 billion in standard form.

Answer..... [1]

2 The total cost of an advertisement in a newspaper is obtained by adding together a fixed charge of \$5 and a charge of 15 cents per word.

(a) Calculate the total cost of an advertisement containing 75 words.

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

(b) The total cost of an advertisement containing n words is C cents.
Write the formula for C in terms of n.

Answer (b) ..... [1]

3 Simplify

(a) $\left(\frac{2}{7}x^2\right)\left(\frac{1}{2}x^2\right)$,

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

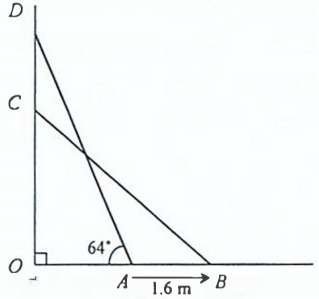
(b) $\frac{2}{7}x^2+\frac{1}{2}x^2$.

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

4 Peter invests \$8500 in a bank which pays compound interest at a rate of 2.75% per annum. Calculate the amount Peter has in the bank after 3 years.

Answer \$ ..... [2]

5 A 5 metre ladder, AD, stands on horizontal ground at A and leans against a vertical wall at D. It makes an angle of 64° with the ground. The point O, on the ground, is vertically below D.
The ladder slides down the wall to C. As a result, the base of the ladder moves a distance of 1.6 m from A to B. Find the angle it now makes with the ground.

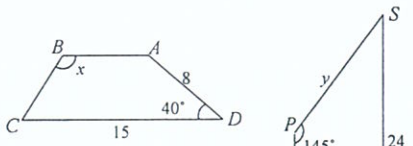


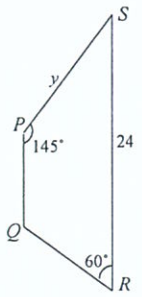
Answer ..... ° [3]

6 Sharon paid $368.60 for a digital camera.
This amount included the 7% Goods and Services Tax (GST).
How much GST did Sharon pay?

Answer $ ..... [2]

7 **(a)** Quadrilateral *ABCD* is similar to quadrilateral *PQRS*.
Find the values of x and y. All the lengths are in centimetres.
The diagrams are not drawn to scale.





Answer (a) x = ... ° [1]

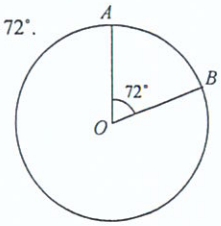
y = ... cm [1]

(b) Is quadrilateral *PQRS* a trapezium? Explain why or why not.

Answer (b) .....

..... [1]

8 A circle, centre O, has radius 7 cm.
A and B are points on the circumference and angle $AOB = 72°$.
Find the perimeter of the **minor sector** AOB.



Answer ..... cm [2]

9 Ahmad either jogs, cycles or swims every Saturday.
The probability that he jogs is $\frac{2}{5}$. The probability that he cycles is $\frac{1}{4}$.

(a) Write down the probability that he does not jog.

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

(b) What is the probability that he swims?

Answer (b) ..... [1]

10 **(a)** Express the ratio of 72 minutes to 1.8 hours in its simplest form.

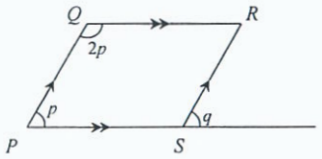
Answer (a) ..... : ..... [1]

(b) A plan is drawn to a scale of 1 : 125.
Find the actual length in metres, of a room which is 4.5 cm long on the plan.

Answer (b) ..... m [2]

---

11 $PQRS$ is a parallelogram. Find the values of p and q.
You must show your working and explain each step.



Answer p = ... ° [1]
q = ... ° [1]

---

12 Write down
(a) the value of x when $\cos x = -0.453$,

Answer (a) x = ... ° [1]

(b) two values of y when $\sin y = 0.745$.

Answer (b) y = ... ° or ..... ° [2]

---

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

$$\frac{5.32 + \sqrt{9.19}}{7.78}.$$

You **must** show your working.

Answer ..... [2]

---

14 A car travels 256 km along an expressway in 3 hours 42 minutes.
Find the car's average speed in
(a) kilometres per hour,

Answer (a) ..... km/h [1]

(b) metres per second.

Answer (b) ..... m/s [2]

---

15 5, 8, 11, 14, ...

For the sequence shown above, find

(a) the next two terms,

Answer (a) ..... and ..... [1]

(b) the nth term,

Answer (b) ..... [1]

(c) the 50^{th} term.

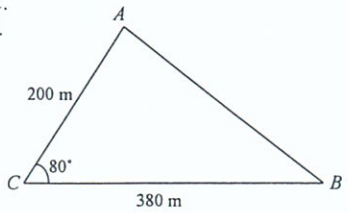
Answer (c) ..... [1]

---

16 A vegetable field is in the shape of triangle ABC.
$AC = 200$ m, $CB = 380$ m, and angle $ACB = 80°$.

A farmer expects to harvest 2.5 kg of carrots from each square metre of field.

Find the mass of carrots he can harvest if he grows only carrots in the triangular field. Express your answer in tonnes.



Answer ..... tonnes [3]

---

17 A plan of a school is drawn to a scale of 2 cm to 10 m.

(a) Express the scale in the form $1 : n$.

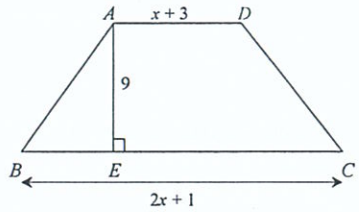
Answer (a) 1 : ..... [2]

(b) Find the area of a rectangular school hall in m^2 if it measures 3.5 cm by 4 cm on the plan.

Answer (b) ..... m^2 [2]

---

18 Figure $ABCD$ below is a trapezium.
Given that $AD = (x + 3)$ cm, $BC = (2x + 1)$ cm, $AE = 9$ cm and the area of the trapezium $ABCD$ is 108 cm^2, find the value of x.



Answer ..... cm [3]

---

19 The number 72, written as the product of its prime factors, is $2^3 \times 3^2$.

(a) Write 84 as the product of its prime factors.

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

(b) Use the results of part (a) to find

(i) the highest common factor of 72 and 84,

Answer (b) (i) ..... [1]

(ii) the lowest common multiple of 72 and 84,

Answer (b) (ii) ..... [1]

(iii) the smallest integer k such that $84k$ is a perfect square.

Answer (b) (iii) ..... [1]

20 **(a)** Find the size of one exterior angle of a regular 10-sided polygon.

Answer (a) ..... ° [1]

(b) Three angles in a hexagon are 120° each.
The size of the remaining three angles are in the ratio 1 : 2 : 3.
Find the smallest of these three angles.

Answer (b) ..... ° [3]

21 **(a)** Factorise $15x + 15$.

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

(b) Expand $(3x - 7)(2x + 5)$ and simplify your answer.

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

(c) Express the following as a single fraction in its simplest form.

$$\frac{4}{y} - \frac{3}{(y-2)}$$

Answer (c) ..... [2]

22 The back-to-back stem-and-leaf diagram below shows the heights, in cm, of a group of boys and girls in a class.

Boys						Girls				
			4	2	13	8				
9	8	2	1	0	14	2	3	4	5	6
				3	15					
		9	8	2	16	0	3	3	3	3
				4	17	0	5			
Key (Boys)						Key (Girls)				
4|17 means 174						16|3 means 163				

(a) How many boys are there in the class?

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

(b) What is the median height of the boys?

Answer (b) ..... cm [1]

(c) What is the modal height of the girls?

Answer (c) ..... cm [1]

(d) Find the percentage of students who are shorter than 160 cm.

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

23 **(a)** Find the largest integer a such that $0.5a < 15$.

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

(b) Solve, by factorisation, $4p^2 - 12p + 9 = 0$.

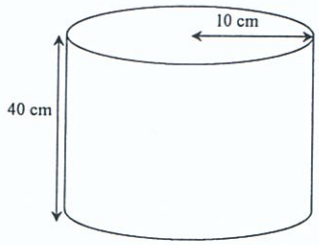
Answer (b) ..... [2]

(c) The difference between two numbers is 34. Three times the bigger number and seven times the smaller number add up to 32.
Write down two equations and solve them simultaneously to find the two numbers.

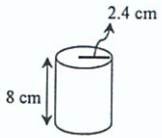
Answer (c) Smaller number = ...

Bigger number = ... [3]

24 Orange juice is stored in a large cylindrical container. The radius of the container is 10 cm and its height is 40 cm. Take $\pi = 3.142$.



Container



Plastic Cup

(a) Find the volume of orange juice in the large container.
Express your answer in litres.

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

(b) All of the orange juice is used to fill cylindrical plastic cups with radius, 2.4 cm and height, 8 cm.
What is the maximum number of cups that can be filled?

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

25 In quadrilateral $ABCD$, $AB = 7.4$ cm, $BC = 8$ cm, $AD = 6$ cm, $CD = 9.6$ cm and angle $DAB = 80°$. AB has been drawn for you.

Answer (a) (b) (c)

A 7.4 cm *B*

(a) Construct quadrilateral $ABCD$. [2]

(b) Construct the perpendicular bisector of AB. [1]

(c) Construct the bisector of angle DAB. [1]

(d) Label the point of intersection of the perpendicular bisector in **(b)** and the angle bisector in **(c)** as X.
Measure AX.

Answer (d) ..... cm [1]

END OF PAPER

SOLUTIONS Sec 4NA Prelim Paper 1 (2015)

1 4.58×10^9 A1

2 a $75 \times 0.15 = \$11.25$ M1
Total cost = 5 + 11.25
= \$16.25 A1

b $C = 500 + 15n$ A1

3 a $\frac{x^4}{7}$ B1

b $\frac{4x^2 + 7x^2}{14}$ M1
$= \frac{11x^2}{14}$ A1

4 $\text{Amount} = 8500\left(1 + \frac{2.75}{100}\right)^3$ M1
= 9220.7111
=\$9220.71 (to nearest cent) A1

5 $\cos 64° = \frac{OA}{5}$ M1
$OA = 5 \times \cos 64° = 2.1918$ m

$OB = 2.1918 + 1.6 = 3.7918$ m M1

$\cos \angle CBO = \frac{3.7918}{5}$
$\angle CBO = \cos^{-1}\left(\frac{3.7918}{5}\right)$
= 40.7° (1 dp) A1

6 $\text{GST} = \frac{7}{107} \times 368.60$ M1
= 24.114
=\$24.11 (nearest cent) A1

7 a $x = 360 - 145 - 60 - 40$
= 115° A1

$\frac{y}{8} = \frac{24}{15}$
y = 12.8 cm A1

b Not a trapezium.
$\angle Q + \angle R = 115° + 60° \neq 180°$ A1 Accept equivalent statements

8 Arc length $AB = \frac{72}{360} \times 2 \times \pi \times 7$ M1
= 8.7976 cm or 8.7964

Perimeter = 7+7+8.7976
= 22.7976 cm or 22.7964
= 22.8 cm (3sf) A1

9 a $\text{P(does not jog)} = 1 - \frac{2}{5}$
$= \frac{3}{5}$ A1

b $\text{P(swims)} = 1 - \frac{2}{5} - \frac{1}{4}$
$= \frac{7}{20}$ A1

10 a 72 min : 1.8×60 min
= 2 : 3 A1

b 1 cm --- 1.25 m M1
4.5 cm --- 1.25×4.5 m
= 5.625 m A1

11 $2p + p = 180°$ (Interior $\angle s$)
$p = 60°$ A1 Deduct 1 mark if any one/both reasons not shown.

$p = q = 60°$ (Corresponding $\angle s$) A1

12 **a** $x = 116.9$ A1

b $y = 48.2,\ 131.8$ A1, A1

13 $\dfrac{5+\sqrt{9}}{8}$ M1

$= 1$ A1

14 **a** Average Speed $= 256 \div 3\dfrac{42}{60}$

$= 69.189$

$= 69.2$ km/h (3 sf) A1

b Ave Speed $= \dfrac{256 \times 1000}{222 \times 60} = 19.219$ M1

$= 19.2$ m/s (3 sf) A1

15 **a** 17 and 20 A1

b $2+3n$ A1

c $2+3(50) = 152$ A1

16 Area of field $= \dfrac{1}{2}(200)(380)\sin 80°$ M1

$= 37\,422.694$ m^2

Mass of carrots $= 2.5 \times 37\,422.694$ M1

$= 93\,556.7$ kg

$= 93.6$ tonnes (3 sf) A1

17 **a** 1 cm : 5 m M1

1 : 500 A1

b 1 cm^2 : 25 m^2 M1 Accept alternative working

(4×3.5) cm^2 : 25×14 m^2

Area of hall $= 350$ m^2 A1

18 $\dfrac{1}{2}(x+3+2x+1)(9) = 108$ M1

$3x + 4 = 24$ M1

$x = 6\dfrac{2}{3}$ or 6.67 (3sf) A1

19 **a** $84 = 2^2 \times 3 \times 7$ A1

b **(i)** HCF = 12 A1

(ii) LCM = 504 A1

(iii) $k = 21$ A1

20 **a** One Exterior $\angle = \dfrac{360}{10} = 36°$ A1

b Sum of interior $\angle$s $= 720°$ M1

$720 - (3 \times 120) = 360°$ M1

Smallest $\angle = \dfrac{1}{6} \times 360$

$= 60°$ A1

21 **a** $15(x+1)$ A1

b $(3x\text{-}7)(2x\text{+}5)$

$= 6x^2 - 14x + 15x - 35$ M1

$= 6x^2 + x - 35$ A1

c $\dfrac{4}{y} - \dfrac{3}{(y-2)}$

$= \dfrac{4(y-2) - 3y}{y(y-2)}$ M1

$= \dfrac{4y - 8 - 3y}{y(y-2)}$

$= \dfrac{y-8}{y(y-2)}$ A1

22 **a** Number of boys = 12 A1

b Median height of boys $= \dfrac{148+149}{2}$

$= 148.5$ cm A1

c Modal height of girls = 163 cm A1

d Number of students shorter than 160 cm = 14

Percentage $= \dfrac{14}{25} \times 100\%$ M1

$= 56\ \%$ A1

23 a $a < 30$
Largest integer = 29 — A1

b $(2p-3)(2p-3)=0$ — M1
$p = 1.5$ — A1

c Let x be the larger number and y be the smaller number.
$x - y = 34$
$3x + 7y = 32$ } M1
Sub x=34+y

Accept alternative working

$3(34+y) + 7y = 32$
$102 + 10y = 32$
$y = \dfrac{32-102}{10} = -7$
Smaller number = − 7 — A1
Bigger number = 27 — A1

24 a Volume = $3.142 \times 10^2 \times 40$ — M1
= 12568 cm^3
= 12.568 litres — A1

b Volume of cup = $3.142 \times 2.4^2 \times 8$ — M1
= 144.78 cm^3

Number of cups = 12568 ÷ 144.78
= 86.807
Max. number of filled cups = 86 — A1

25 a Please see attached.

∠80°, all lengths correctly drawn, award A2.
Deduct 1 mark if any length is off by more than ±0.1 cm.
Deduct 1 mark if ∠80° is off by more than ±1°.
Deduct 1 mark if arcs for vertex C are not shown.
Max. mark to deduct is 2.

b Please see attached.

Bisector is perpendicular to AB and cuts AB into two equal parts, award A1.

c Please see attached.

Angle bisector halves the angle, award A1 if bisector is within ± 1° of 40°.

d AX = 4.8 cm

Length of AX is within ± 0.1 cm of 4.8 cm, award A1.

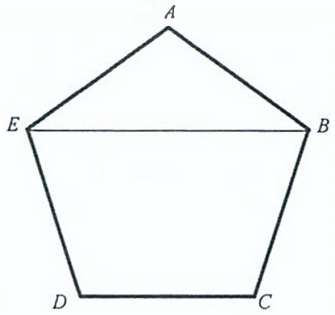
Section A (44 marks)

Answer all the questions in this section.

1 (a) Express 1018 nanograms in grams, giving your answer in standard form. [1]

(b) The diameter of a neutral helium atom is about 102 picometres. Suppose that we could line up helium atoms side by side in contact with one another. Approximately how many atoms would it take to make the distance from end to end of 1 cm? Give your answer to 3 significant figures in standard form. [2]

2

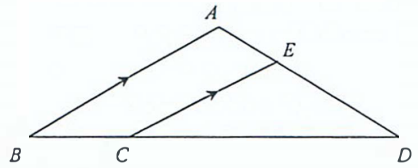


The diagram above shows a regular pentagon *ABCDE*. Find

(a) angle *EDC*, [2]

(b) angle *BED*, giving a reason for your answer. [2]

3



In the diagram above, *AED* and *BCD* are straight lines. *AB* is parallel to *EC*.

(a) Explain why angle *ABC* = angle *ECD*. [1]

(b) Triangle *ABD* is similar to triangle *ECD*.

(i) *AD* = 5 cm, *AE* = 2 cm and *CD* = 6 cm

Find the length of *BD*. [2]

(ii) Find the scale factor in reducing triangle *ABD* to triangle *ECD*. [1]

---

4 (a) A dealer bought a car for $34 000.

He sold it for $39 000.

Calculate his percentage profit. [2]

(b) Mr Kum bought the car for $39 000 on Hire Purchase.

He paid a 40% deposit plus 40 monthly payments of $635.

What is the total amount he paid for the car? [3]

---

5 Solve

(a) $\frac{x-3}{4}+\frac{x-4}{5}=1$, [2]

(b) $2x^2+3x-6=0$, giving your answers correct to two decimal places. [3]

---

6 (a) Write as a single power of a

(i) $a^0 \times a^2 \times a^5$ [1]

(ii) $\sqrt[5]{a^3}$. [1]

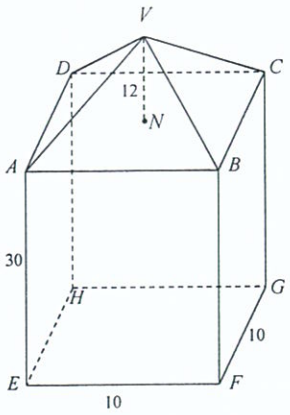
(b) Amy walked for x km at 4 km/h.

(i) Write down an expression in terms of x for the time taken for Amy's walk. [1]

(ii) Amy then cycled 1 km more than the distance she walked. She cycled at a speed of 16 km/h and the total time taken for the entire journey was 3 hours.

Write down an equation in x and solve it to find the distance Amy walked. [3]

7



A traffic bollard consists of a pyramid, $VABCD$, attached to a cuboid $ABCDHEFG$. $ABCD$ and $EFGH$ are squares of side 10 cm.

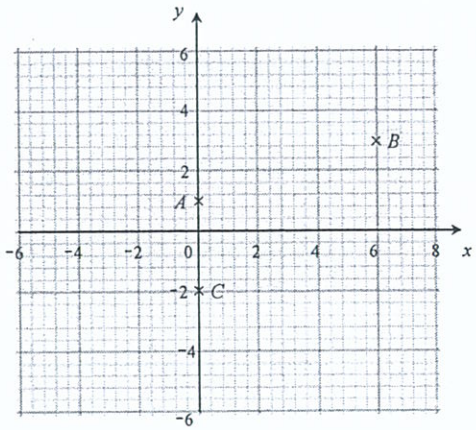
The vertical height, VN, of the pyramid is 12 cm, $VA = VB = VC = VD$ and $AE = 30$ cm.

Calculate

(a) the volume of the bollard, [2]

(b) the surface area of the bollard.
[Exclude the area of the bottom of the bollard.] [3]

8



On the axes shown above, A is (0, 1), B is (6, 3) and C is (0,-2).

Find

(a) the gradient of AB, [1]

(b) the equation of the line AB, [1]

(c) the area of triangle ABC, [1]

(d) the coordinates of **two** possible points of D, such that the four points A, B, C and D are the four vertices of a parallelogram. [2]

---

9 Jimmy carried out a survey to find out about the heights of 70 students in a badminton club.
The table below shows the distribution of their heights.

Height (h cm)	$140 < h \leq 150$	$150 < h \leq 160$	$160 < h \leq 170$	$170 < h \leq 180$
Frequency	18	22	27	3

(a) Draw a histogram to represent this information. [2]

(b) Calculate

(i) the mean height of the students, [2]

(ii) the standard deviation. [2]

(c) Explain why the value of the mean you calculated in part **(b)(i)** is only an estimate of the mean height of the students. [1]

Section B (16 marks)

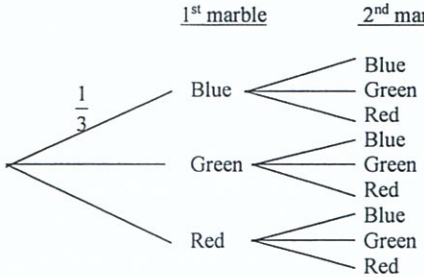
Answer any **two** questions from this section. Each question carries 8 marks.

10 A bag contains 21 marbles of which 7 are blue, 6 are green and the rest are red.

(a) Find the probability of picking a red marble from the bag. [1]

John picks 2 marbles from the bag with replacement.

(b) Copy and complete the tree diagram to show the possible outcomes and probabilities.



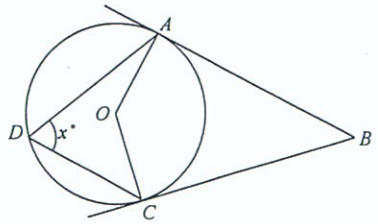
[3]

(c) Find the probability that both marbles are green. [1]

(d) Find the probability that the first marble is red and the second marble is blue. [1]

(e) Find the probability that the two marbles are of different colours. [2]

11



In the diagram above, A, C and D are points on the circumference of a circle, centre O.

BA and BC are tangents.

Angle $ADC = x°$.

(a) Find, in terms of x,

(i) reflex angle AOC, [2]

(ii) angle ABC, giving your answer in its simplest form. [2]

(b) Obtuse angle $AOC = 2.7$ radians and $AO = 9$ cm.

(i) Calculate the area of the **major** sector AOC. [3]

(ii) Express obtuse angle AOC in degrees. [1]

12 (a) (i) Sketch the graph of $y = (x-2)(x+3)$.
An accurate plot is not required but you should mark on your sketch the coordinates of the points where the graph crosses the axes. [2]

(ii) Write down the equation of the line of symmetry of the graph. [1]

(b) **Answer the whole of this part of the question on a single sheet of graph paper.**

The population of a certain organism doubles each day.

The number of organisms present, y, after x days is given by

$$y = 3 \times 2^x.$$

The table below shows some corresponding values of $y = 3 \times 2^x$.

x	0	1	2	3	4	5
y	3	p	12	q	48	96

(i) Calculate the values of p and q. [1]

(ii) Draw the graph of $y = 3 \times 2^x$ for $0 \leq x \leq 5$. Use a scale of 2 cm to 1 unit on the x-axis and 1 cm to 10 units on the y-axis. [3]

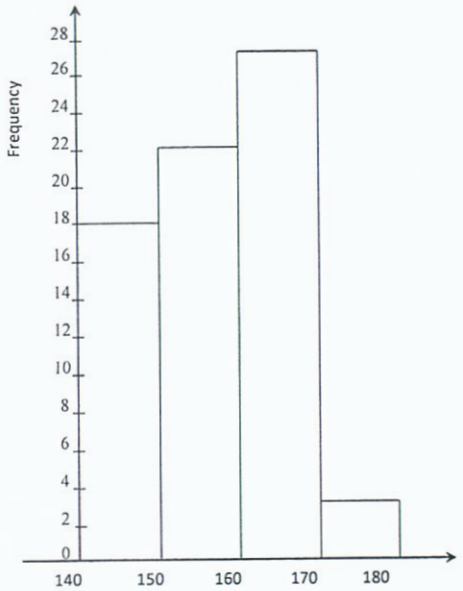
(iii) Use your graph to estimate the size of the population after 3.6 days. [1]

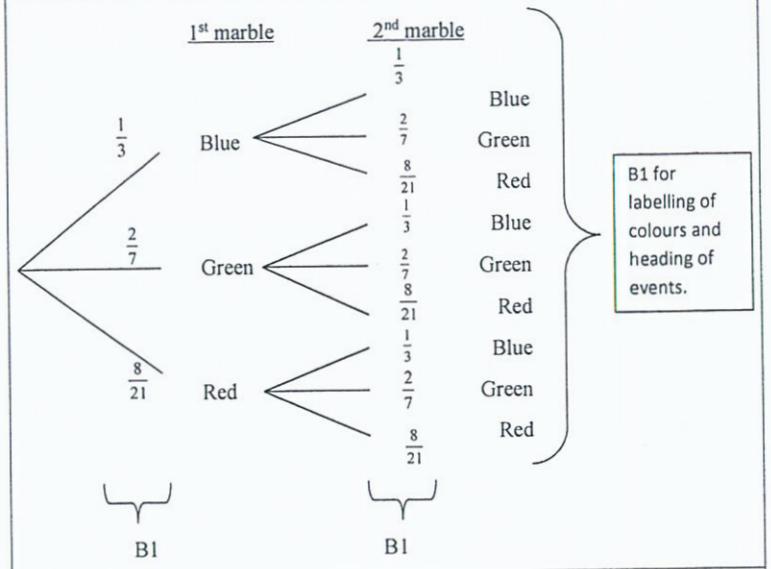
END OF PAPER

SOLUTIONS Sec 4NA Prelim Paper 2 (2015)

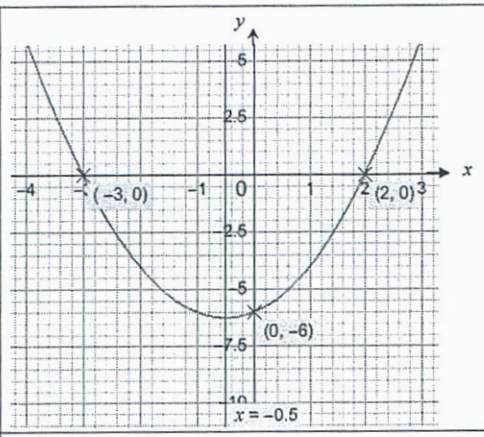
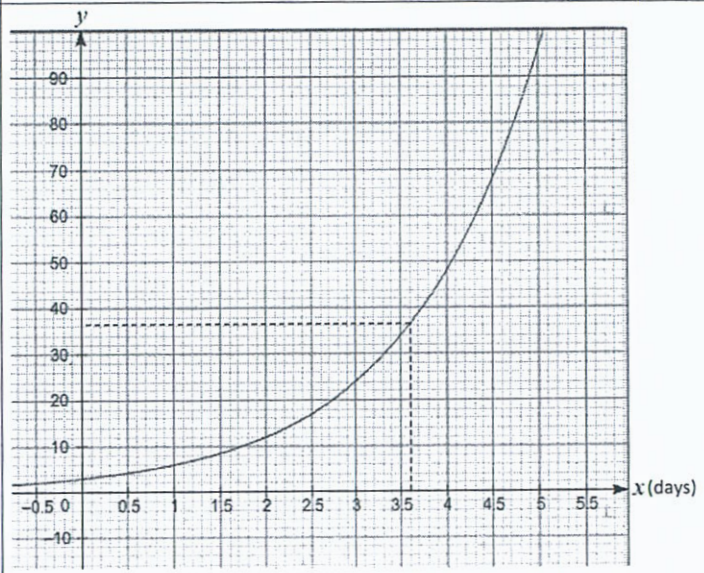
1	(a)		1.018×10^{-6}	B1	
	(b)		$\frac{0.01}{102\times10^{-12}}$ $=98039215$ $=9.80\times10^{7}$	M1 A1	
2	(a)		Angle $EDC=\frac{(5-2)180}{5}$ $=108^{\circ}$	M1 A1	
	(b)		Angle $BED=72^{\circ}$	B1	$180^{\circ}-108^{\circ}$
			Interior angles OR Angles in a Δ	B1	
3	(a)		Corresponding angles	B1	
	(b)	(i)	$\frac{BD}{6}=\frac{5}{3}$ $BD=10$ cm	M1 A1	
		(ii)	$\frac{3}{5}$ OR 0.6	A1	
4	(a)		% Profit $=\frac{39000-34000}{34000}\times100$ $=14.7\%$ (3sf)	M1 A1	
	(b)		Deposit $=0.4\times39000$ Total Amount paid $=(0.4\times39000)+(40\times635)$ $=15600+25400$ $=\$41000$	M1 M1 A1	

5	(a)		$\frac{x-3}{4}+\frac{x-4}{5}=1$ $\frac{5(x-3)+4(x-4)}{20}=1$ $9x-31=20$ $x=5\frac{2}{3}$	M1 A1	
	(b)		$x=\frac{-(3)\pm\sqrt{3^2-4(2)(-6)}}{2(2)}$	M1	
			$x=-2.64$ or 1.14 (2 dp)	A1,A1	
6	(a)	(i)	a^7	B1	
		(ii)	$a^{\frac{3}{5}}$	B1	
	(b)	(i)	$\frac{x}{4}$ hour	B1	
		(ii)	$\frac{x}{4}+\frac{x+1}{16}=3$ $\frac{4x+x+1}{16}=3$ $x=9\frac{2}{5}$ OR 9.4 km	B1 M1 A1	
7	(a)		Vol of bollard $=\frac{1}{3}(10^2)(12)+(10\times10\times30)$ $=3400$ cm^3	M1 A1	
	(b)		Slant height of pyramid $=\sqrt{12^2+5^2}$ $=13$ cm	M1	
			Surface area of bollard $=\left(4\times\frac{1}{2}\times10\times13\right)+(4\times10\times30)$ $=260+1200$ $=1460$ cm^2	M1 A1	

8	(a)		Gradient $= \frac{3-1}{6-0} = \frac{1}{3}$	B1	
	(b)		$y = \frac{1}{3}x + 1$	B1	
	(c)		Area $= \frac{1}{2} \times 3 \times 6 = 9$ units^2	A1	
	(d)		(6, 0), (6, 6), (−6, −4)	B1, B1	Any 2 points
9	(a)			Bars correct widths & labels, B1 Bars correct heights, B1	
	(b)	(i)	Mean height $= \frac{(145 \times 18) + (155 \times 22) + (165 \times 27) + (175 \times 3)}{70}$ $= \frac{11000}{70}$ $= 157.14$ $= 157$ cm (3sf)	M1 A1	
		(ii)	Standard deviation = 8.7656 = 8.77 cm (3 sf)	B2	
	(c)		Assumed all values at middle of interval OR Individual heights not known	B1	Accept equivalent answers.

10	(a)		P(red marble) $= \frac{8}{21}$	B1	
	(b)				
	(c)		P(both are green) $= \frac{2}{7} \times \frac{2}{7}$ $= \frac{4}{49}$	B1	
	(d)		P(1st is red and 2nd is blue) $= \frac{8}{21} \times \frac{1}{3}$ $= \frac{8}{63}$	B1	
	(e)		P(different colours) $= 1 - \left(\frac{1}{3} \times \frac{1}{3}\right) - \left(\frac{2}{7} \times \frac{2}{7}\right) - \left(\frac{8}{21} \times \frac{8}{21}\right)$ $= \frac{292}{441}$	M1 A1	Accept alternative working

11	(a)	(i)	Obtuse angle $AOC = 2x^\circ$ ($\angle$ at centre $= 2\angle$ at O^{cc}) Reflex angle $AOC = (360\text{-}2x)^\circ$	M1 A1	
		(ii)	Angle $ABC = 360 - 90 - 90 - 2x$ (Sum of angles of a quad) $= (180 - 2x)^\circ$	M1 A1	
	(b)	(i)	Reflex angle $AOC = (2\pi - 2.7)$ radians Area of major sector $= \frac{1}{2} \times 9^2 \times (2\pi - 2.7)$ $= 145.152$ or 145.119 $= 145$ cm^2 (3 sf)	M1 M1 A1	
		(ii)	Angle $AOC = 2.7$ rad $= 154.7^\circ$ (1 dp)	B1	

12	(a)	(i)		x-intercepts at (-3, 0) and at (2, 0), B1 Correct shape and y-intercept at (0, -6), B1	
		ii)	$x = -0.5$	B1	
	(b)	(i)	$p = 6$, $q = 24$	B1	
		(ii)			
			Award 3 marks if - all points are correctly plotted, - curve is smooth and symmetrical and - scale along both axes are correct. Deduct 1 mark if both axes and graph are not labelled. Deduct P marks if only one or both of the axes is not labelled or if only the graph is not labelled.	3 marks	
		(iii)	Size of population = 35 to 37 (Exact value is 36.377)	B1	