Name:_____ ( )	Class: S2_____

SERVE-LEAD-EXCEL

GREENDALE SECONDARY SCHOOL
End of Year Examination 2018

60

MATHEMATICS **4048/01**

Paper 1 5 Oct 2018

Sec 2 Express / SBB (Express) **1 hour 30 mins**

Candidates answer on the Question Paper.

READ THESE INSTRUCTIONS FIRST

Target Before:

Target After:

Write your index number and name on all the work you hand in.
Write in dark or blue pen.
You may use a soft pencil for any diagrams or graphs.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions.

If working is needed for any question it must be shown with the answer.
Omission of essential working may result in loss of marks.
You are expected to use a scientific calculator to evaluate explicit numerical expressions.
If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place.
For π, use either your calculator value or 3.142, unless the question requires the answer in terms of π.

At the end of the examination, fasten all your work securely together.
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 **60.**

Post-Exam Use

Question	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Strand	A	A	G	A	N	N	A	A	A
Marks									
Question	**Q10**	**Q11**	**Q12**	**Q13**	**Q14**	**Q15**	**Q16**	**Q17**	
Strand	S	G	A	A	G	G	G	A	
Marks									

This document consists of **12** printed pages, including this cover page.

Mathematical Formulae

Compound interest

$$\text{Total amount} = P\left(1+\frac{r}{100}\right)^n$$

Mensuration

Curve surface area of a cone $= \pi rl$

Surface area of a sphere $= 4\pi r^2$

$$\text{Volume of a cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Volume of a sphere} = \frac{4}{3}\pi r^3$$

$$\text{Area of triangle } ABC = \frac{1}{2}ab\sin C$$

Arc length $= r\theta$, where θ is in radians

$$\text{Sector area} = \frac{1}{2}r^2\theta, \text{ where } \theta \text{ is in radians}$$

Trigonometry

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$a^2 = b^2 + c^2 - 2bc\cos A$$

Statistics

$$\text{Mean} = \frac{\sum fx}{\sum f}$$

$$\text{Standard deviation} = \sqrt{\frac{\sum fx^2}{\sum f} - \left(\frac{\sum fx}{\sum f}\right)^2}$$

For Examiner's Use Only

Answer **all** questions.

1 (a) Solve the inequality $3-2x<13$.

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

(b) Hence, write down the smallest possible integer of x.

Ans (b) : $x =$ ..... [1]

---

2 One of the solutions of $x^2+kx-28=0$ is $x=4$.
Find

(a) the value of k,

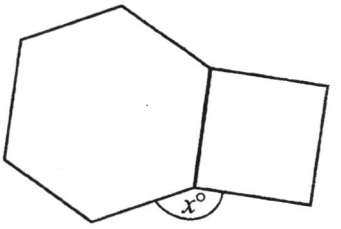
Ans (a) : $k =$ ..... [1]

(b) the other solution of the equation.

Ans (b) : $x =$ ..... [1]

For Examiner's Use Only

3 The diagram below shows a regular hexagon and a square.



Calculate the angle, $x°$, between the regular hexagon and the square.

Ans : ..... ° [2]

---

4 The graph of $y = 16 - x^2$ is drawn.

(a) State whether the graph has a maximum point or a minimum point.

Ans (a) : .....point [1]

(b) It is given that $(-3, p)$ lies on the graph. Find the value of p.

Ans (b) : $p =$ ..... [1]

For Examiner's Use Only

5 The following is a number sequence:

5, 7, 9, 11, 13, ...

(a) Write down an expression, in terms of n, for the n^{th} term.

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

(b) Explain why 2892 cannot be a term in this number sequence. [1]
Answer:

---

6 (a) Express 392 as a product of its prime factors, giving your answer in index notation.

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

(b) Find the smallest positive integer k such that $392k$ is a perfect cube.

Ans (b) : k = ... [1]

(c) Find the HCF of 294 and 392.

Ans (c) : ..... [1]

For Examiner's Use Only

7 Given that $g = \dfrac{7h-1}{h-2}$, express h in terms of g.

Ans : ..... [3]

---

8 Solve the following simultaneous equations.

$$2x = 9 - y$$
$$3x - 2y = 24$$

Ans : $x =$ ....., $y =$ ..... [3]

---

9 (a) Simplify $x^2 - (x-1)^2 + (x-2)^2 - (x-3)^2$.

Ans (a) : ..... [3]

(b) Hence, find the value of $2020^2 - 2019^2 + 2018^2 - 2017^2$.

Ans (b) : ..... [1]

For Examiner's Use Only

10 A basket contains 6 oranges and 11 apples.

(a) If a fruit is drawn at random from the basket, find the probability that it is

(i) an apple,

Ans (a)(i) : ..... [1]

(ii) either an orange or an apple.

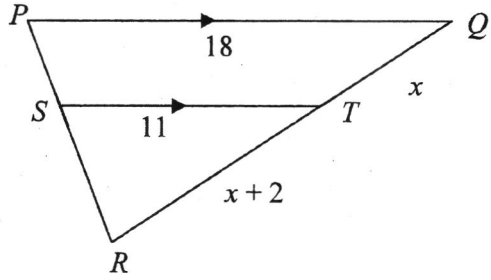
Ans (a)(ii) : ..... [1]

(b) If n pears are added to the basket, the probability that the fruit drawn is an orange is $\frac{3}{11}$. Find the value of n.

Ans (b) : $n =$ ..... [2]

---

11 The diagram below, which is not drawn to scale, shows PQ is parallel to ST. It is given that $PQ = 18$ cm, $ST = 11$ cm, $TQ = x$ cm and $RT = (x+2)$ cm.



(a) State a triangle that is similar to ΔSRT.

Ans (a) : Δ..... [1]

(b) Hence, find the value of x.

Ans (b) : $x =$ ..... [2]

For Examiner's Use Only

12 Factorise each of the following expressions completely.

(a) $6x^2 - 9x - 42$

Ans (a) : ..... [2]

(b) $pq - 4p - 12 + 3q$

Ans (b) : ..... [2]

---

13 Simplify

(a) $\frac{2a^2}{5bc} \div \frac{14a}{15c}$

Ans (a) : ..... [2]

(b) $\frac{36}{2p - 14q} \times \frac{p^2 - 49q^2}{3}$

Ans (b) : ..... [3]

For Examiner's Use Only

14 A rectangular land is 540 m long and 300 m wide.

(a) Draw a plan of the land using a scale of 1:10 000.

[2]

(b) (i) **Using your scale drawing**, find the actual distance of the diagonal, correct to the nearest metre.

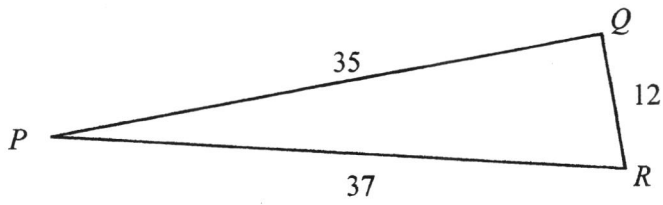
Ans (b)(i) : ..... [1]

(ii) By **calculating** the actual distance of the diagonal, find the percentage error of your answer in (b)(i).

Ans (b)(ii) : ..... [2]

For Examiner's Use Only

15 The triangle PQR below has sides $PR = 37$ cm, $PQ = 35$ cm and $QR = 12$ cm.



(a) Show that PQR is a right-angled triangle.
Answer:

[2]

(b) Find $\sin \angle QPR$.

Ans (b) : $\sin \angle QPR =$ ..... [1]

(c) Calculate $\angle PRQ$.

Ans (c) : $\angle PRQ =$ .....° [2]

For Examiner's Use Only

16 A solid sphere has a volume of 288π m^3.

(a) Show that the radius, r, is 6 m.

Answer:

[1]

(b) Find the surface area of the sphere.

Ans (b) : ..... m^2 [2]

(c) The solid sphere is cut into two equal hemispheres and painted. If a tin of paint can cover 80 m^2, find the minimum number of tins of paint needed to paint one hemisphere.

Ans (c) : ..... [2]

For Examiner's Use Only

17 Solve the following equations.

(a) $5(x-3)=1-(8-x)$

Ans (a) : $x=$ ..... [2]

(b) $\frac{y}{20}=\frac{5}{y}$

Ans (b) : $y=$ ..... [2]

(c) $2p^2+18p=0$

Ans (c) : $p=$ ..... [2]

End of Paper

Name:_____ ( )	Class: S2_____

SERVE·LEAD·EXCEL

GREENDALE SECONDARY SCHOOL
End of Year Examination 2018

MATHEMATICS **4048/02**

Paper 2 2 Oct 2018

Sec 2 Express / SBB (Express) **1 hour 55 minutes**

Additional Materials : 05 Writing Paper
01 Graph Paper
Candidates answer on the writing paper.

READ THESE INSTRUCTIONS FIRST

Write your index number and name on all the work you hand in.
Write in dark or blue pen.
You may use a soft pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

Start each question on a new page.

Answer **all** questions.

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Omission of essential working may result in loss of marks.
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At the end of the examination, fasten all your work securely together.
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 **75**.

This document consists of **8** printed pages, including this cover page.

Mathematical Formulae

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$$\text{Surface area of a sphere} = 4\pi r^2$$

$$\text{Volume of a cone} = \frac{1}{3}\pi r^2 h$$

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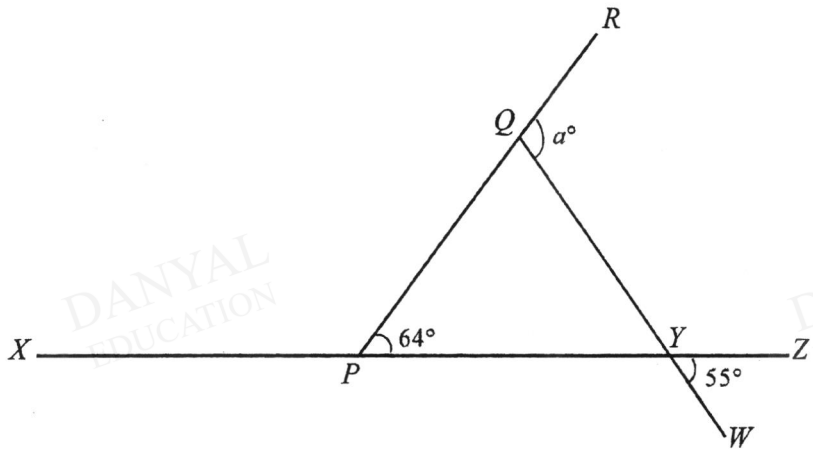
Answer **all** questions and start each question on a **new page**.

1 In the diagram, *XPYZ*, *PQR* and *QYW* are straight lines.
Stating your reasons clearly, find the value of *a*. [3]



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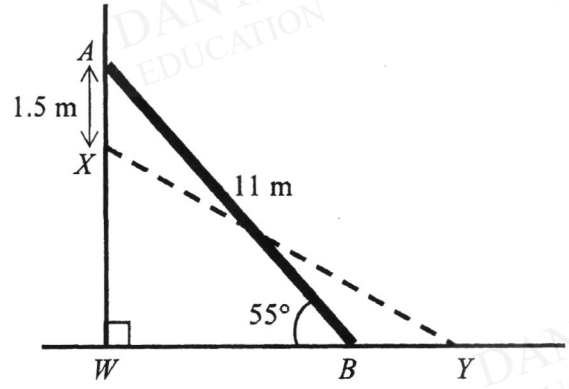
2 A ladder, *AB*, 11 m long, is placed against a wall. The angle between the ladder and the floor is 55°.



(a) Find *WB*. [2]

(b) The ladder slides down the wall by 1.5 m to a new position *XY*. Find the new angle between the ladder and the floor. [3]

---

3 (a) F is directly proportional to r^2. It is given that $F = 36$ for a particular value of r. Find the value of F when this value of r is doubled. [2]

(b) The Helix Bridge, with a length of 280 m, is a pedestrian bridge linking Marina Centre with Marina South. A model of the Helix Bridge is made using a scale of 1 cm to 20 m.

(i) Express the scale in the form of $1 : n$. [1]
(ii) Find the length of the model bridge in centimetres. [1]
(iii) The model of the Helix Bridge has a surface area of 14 cm^2 for the walking path. Calculate the actual surface area of the walking path in square metres. [2]

---

4 (a) Expand and simplify $(2x-1)(3x-4)+3(1-2x^2)$. [2]

(b) Express as a single fraction in its simplest form, $1-\frac{2f-g}{f+3h}$. [2]

(c) Simplify $\frac{y^2+2y-3}{2y-10} \div \frac{(y-1)^2}{y-5}$. [3]

---

5 (a) A chef spends $1\frac{3}{4}$ hours in the kitchen.

The ratio of the times she spends preparing ingredients, cooking and decorating her dishes is 7 : 2 : 5.

Calculate

(i) the time, in minutes, she spends cooking, [2]
(ii) the percentage of time she spends decorating her dishes. [2]

(b) In 2014, the restaurant had 22 500 customers.

(i) In 2015, the restaurant had 10% less customers than in 2014. Calculate the number of customers the restaurant had in 2015. [2]

(ii) In 2014, the number of customers was 20% more than in 2013. Calculate the number of customers the restaurant had in 2013. [2]

---

6 Jessica cycles from her house to school at a speed of x km/h. The distance between her house and her school is 6 km.

(a) Write down an expression in terms of x for the time, in hours, that Jessica takes to cycle from her house to her school. [1]

On her return journey, Jessica's speed increases by 2 km/h as compared to her journey from her house to her school.

(b) Write down an expression in terms of x for the time, in hours, that Jessica takes to cycle from her school back to her house. [1]

(c) Given that the total time taken for both journeys is $1\frac{3}{4}$ hours, form an equation in terms of x and show that it reduces to $7x^2 - 34x - 48 = 0$. [3]

(d) Solve $7x^2 - 34x - 48 = 0$. [2]

(e) Calculate the time taken, in hours, for Jessica to cycle from her house to school. [1]

7 22 mobile phones batteries for Brand A and 20 mobile phone batteries for Brand B were tested for their battery life in between charges. The battery life, in hours, for both brands are shown in the stem-and-leaf diagram below.

Brand A		Brand B
8 8 7 5	0	7
9 8 7 1 0 0	1	4 7 7 8 9
2 2 1	2	5 5 5 7 9
3 2 1 1 1 1 1 0	3	2 4 6 7 8 9
	4	2 3 3
0	5	
Key: 1|2 means 21 hours		Key: 2|5 means 25 hours

(a) Find the modal battery life for Brand A [1]

(b) Find the median battery life for Brand A. [1]

(c) Find the mean battery life for Brand B. [2]

(d) Suggest a brand to buy and explain your answer. [2]

(e) Calculate the percentage of mobile phones which have a battery life of less than 10 hours. [2]

(f) A mobile phone is chosen from Brand B. Find the probability that the phone has a battery life of more than 40 hours. [1]

---

8 (a) (i) Factorise $49-k^2$. [1]

(ii) Solve $49-k^2=0$. [1]

(iii) Given that k m is the length of a table, explain why one of the solutions in part **(ii)** should be rejected. [1]

(b) It is given that $v^2=u^2+2as$.

(i) Find v when $u=15.5$, $a=-2$ and $s=10$. [2]

(ii) Express u in terms of v, a and s. [2]

(c) Express $\frac{3}{2h-k}-\frac{2k+1}{3k-6h}$ as a single fraction in its simplest form. [3]

---

9 Answer the whole of this question on a sheet of graph paper.

The table below is for the equation $y = 2 + 3x - x^2$.

x	-2	-1	0	1	2	3	4
y	-8	p	2	4	4	q	-2

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

(b) Using a scale of 2 cm to represent 1 unit on the x-axis and 1 cm to represent 1 unit on the y-axis, plot the points given in the table and join them with a smooth curve. [3]

(c) Using your graph from (b), write down

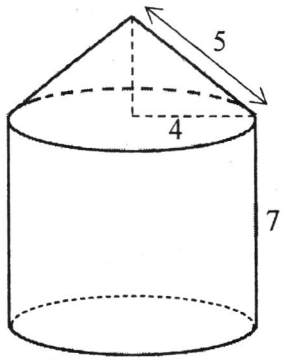
(i) the value(s) of x when $y = -1$. [1]

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

(d) (i) On the same graph, draw the line $y = x + 2$. [2]

(ii) Hence, use the graph to find the solutions to the equation $2 + 3x - x^2 = x + 2$. [2]

10 The diagram below shows a candle that has a base of a cylinder with a cone on top. Both the cylinder and the cone have a radius of 4 cm. The height of the cylinder is 7 cm and the slant height of the cone is 5 cm.



(a) Find the height of the cone. [2]

(b) Find the volume of the candle. [3]

Three different candles with the same measurements as the candle above are made using one of these materials – paraffin wax, stearin or beeswax. The total burn time, which is the time taken for the candles to completely burn, differs for these three materials.

Candle Material	Paraffin Wax	Stearin	Beeswax
Burn time	16 hours	18.5 hours	30 hours

(c) (i) Which material would you choose to make your candle? Explain your answer. [1]

(ii) After burning for seven hours, the remaining wax is melted to form a **cube**. Using the material chosen in (c)(i), find the length of the cube. [3]

End of Paper

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7	$g(h-2)=7h-1$ $gh-2g=7h-1$ $gh-7h=2g-1$ $h(g-7)=2g-1$ $h=\dfrac{2g-1}{g-7}$	 M1 M1 A1
8	$2x+y=9$ $4x+2y=18...(1)$ $3x-2y=24...(2)$ $(1)+(2)$, $7x=42$ $x=6$ $y=-3$	 M1 A1 A1
9(a)	$x^2-(x^2-2x+1)+x^2-4x+4-(x^2-6x+9)$ $=2x-1-4x+4+6x-9$ $=4x-6$ *or* $(x-x+1)(x+x-1)+(x-2-x+3)(x-2+x-3)$ $=2x-1+2x-5$ $=4x-6$	M1 M1 A1 M1 M1 A1
(b)	$4(2020)-6$ $=8074$	 B1
10(a)(i)	$\dfrac{11}{17}$	B1
(ii)	1	B1
(b)	$\dfrac{6}{17+n}=\dfrac{3}{11}$ $51+3n=66$ $3n=15$ $n=5$	M1 A1

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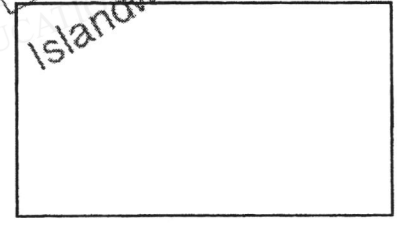
11(a)	ΔPRQ	B1
(b)	$\frac{x+2}{2x+2}=\frac{11}{18}$ $18(x+2)=11(2x+2)$ $18x+36=22x+22$ $4x=14$ $x=3.5$	M1 A1
12(a)	$3(2x^2-3x-14)$ $=3(2x-7)(x+2)$	M1 A1
(b)	$p(q-4)+3(q-4)$ $=(q-4)(p+3)$	M1 A1
13(a)	$\frac{2a^2}{5bc}\times\frac{15c}{14a}=\frac{3a}{7b}$	B1(correct simplification of values) B1(correct simplification of letters)
(b)	$\frac{36}{2p-14q}\times\frac{p^2-49q^2}{3}$ $=\frac{36}{2(p-7q)}\times\frac{(p+7q)(p-7q)}{3}$ $=6(p+7q)$ $=6p+42q$	M1(factorise p^2-49q^2 correcty), M1 (correct cancellation) A1(for either $6(p+7q)$ or $6p+42q$)
14(a)	 5.4 cm	B1(correct length) B1(correct width)
(b)	6.2 ±0.1cm → 620 / 630 / 610 m Actual distance = 620 m	B1

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(c)	$\sqrt{540^2+300^2}$ $=\sqrt{381600}$ $=617.7378$ Percentage error $=\frac{620-617.7378}{617.7378}\times 100\%$ $=0.36621$ $=0.366\%$ OR $=\frac{630-617.7378}{617.7378}\times 100\%$ $=1.98502$ $=1.99\%$ OR $=\frac{617.7378-610}{617.7378}\times 100\%$ $=1.2526$ $=1.25\%$	M1 A1
15(a)	$PR^2=37^2=1369$ $PQ^2+QR^2=35^2+12^2=1369$ Since $PR^2=PQ^2+QR^2$, by Pythagoras' Theorem, PQR is a right-angled triangle.	B1 B1
(b)	$\frac{12}{37}$	B1
(c)	$\tan\angle PRQ=\frac{35}{12}$ $\angle PRQ=71.0754=71.1°$	M1 A1

For Examiner's Use Only

16(a)	$\frac{4}{3}\pi r^3 = 288\pi$ $r^3 = 216$ $r = 6(shown)$	B1
(b)	Surface area $= 4\pi r^2$ $= 4\pi(6)^2$ $= 452.389$ $= 452m^2$	M1 A1
(c)	Total surface area $= 3\pi(6)^2$ $= 339.292$ $= 339m^2$ Minimum number of tins of paint needed = 3	M1 A1
17(a)	$5x - 15 = 1 - 8 + x$ $4x = 8$ $x = 2$	M1 A1
(b)	$x^2 = 100$ $x^2 - 100 = 0$ $(x+10)(x-10) = 0$ $x = -10$ *or* $x = 10$	M1 A1 (both answers correct)
(c)	$2p^2 + 18p = 0$ $2p(p+9) = 0$ $2p = 0$ $p = 0$ *or* $p + 9 = 0$ $p = -9$	M1 A1(both answers correct)

Qns	Marking Scheme	Marking Scheme
1	$\angle QYX = 55°$ (vertically opposite angles) $\angle PQY = 180° - 64° - 55° = 61°$ (angles sum of triangle) $a = 180 - 61 = 119$ (angles on a straight line)	B1 B1 B1 (1m deducted if reasons are incomplete/incorrect)
2(a)	$\cos 55° = \frac{WB}{11}$ $WB = 6.3093 = 6.31m$	M1 A1
(b)	$\sin 55° = \frac{AW}{11}$ $AW = 11\sin 55° = 9.0107$ $XW = 9.0107 - 1.5 = 7.5107$ $\sin \angle XYW = \frac{7.5107}{11}$ $\angle XYW = 43.0619 = 43.1°$	M1 M1 A1
3(a)	$F = kr^2$ $36 = kr^2$ $F = k(2r)^2$ $F = 4kr^2$ $F = 4(36) = 144$	M1 A1
(b)(i)	$1cm : 2000cm$ $1:2000$	B1
(b)(ii)	$1cm \rightarrow 20m$ $280m \rightarrow 14cm$ The length of the bridge is 14 cm.	B1
(b)(iii)	$1cm^2 \rightarrow 400m^2$ $14cm^2 \rightarrow 5600m^2$ The area of the walking path is 5600 m^2	M1 A1

4(a)	$(2x-1)(3x-4)+3(1-2x^2)$ $=6x^2-8x-3x+4+3-6x^2$ $=7-11x$	M1 A1
(b)	$1-\frac{2f-g}{f+3h}$ $=\frac{f+3h}{f+3h}-\frac{2f-g}{f+3h}$ $=\frac{f+3h-(2f-g)}{f+3h}$ $=\frac{-f+3h+g}{f+3h}$	 M1 A1
(c)	$\frac{(y+3)(y-1)}{2(y-5)}\times\frac{y-5}{(y-1)^2}$ $=\frac{y+3}{2(y-1)}$	M1(correct factorization of y^2+2y-3) M1(correct cancellation) A1
5(a)(i)	$\frac{2}{14}\times1\frac{3}{4}\times60$ $=15\text{ min}$	M1 A1
(a)(ii)	$\frac{5}{14}\times100$ $=35.714$ $=35.7\%$	M1 A1
(b)(i)	$100\% \rightarrow 22500$ $90\% \rightarrow 20250$ 20250 customers in 2015.	M1 A1
(b)(ii)	$120\% \rightarrow 22500$ $100\% \rightarrow 18750$ 18750 customers in 2013.	M1 A1

6(a)	$T=\frac{6}{x}$	B1
(b)	$T=\frac{6}{x+2}$	B1
(c)	$\frac{6}{x}+\frac{6}{x+2}=\frac{7}{4}$ $\frac{6(x+2)+6x}{x(x+2)}=\frac{7}{4}$ $\frac{6x+12+6x}{x(x+2)}=\frac{7}{4}$ $4(12x+12)=7x(x+2)$ $48x+48=7x^2+14x$ $7x^2-34x-48=0(shown)$	M1 M1 M1
(d)	$(7x+8)(x-6)=0$ $x=6$ *or* $x=-\frac{8}{7}$	M1 A1 (both answers are correct)
(e)	$T=\frac{6}{6}=1\,\text{hour}$	B1
7(a)	31 hours	B1
(b)	$\frac{21+22}{2}=21.5$	B1
(c)	$\frac{567}{20}$ $=28.35$	M1 A1
(d)	Brand B. The median and mean for Brand B is higher. Therefore its battery life is longer.	B1 B1 (working must be shown when comparing median/mean)
(e)	$\frac{5}{42}\times 100\%$ $=11.9048$ $=11.9\%$	M1 A1
(f)	$P(>40)=\frac{3}{20}$	B1

8(a)(i)	$(7-k)(7+k)$	B1
(ii)	$(7-k)(7+k)=0$ $k=7$ *or* $k=-7$	B1(both answers correct)
(iii)	The length of the table cannot be a negative value.	B1
(b)(i)	$v^2=15.5^2+2(-2)(10)$ $v^2=200.25$ $v=\pm 14.15097=\pm 14.2$	M1 A1(must show $\pm$)
(ii)	$u^2=v^2-2as$ $u=\pm\sqrt{v^2-2as}$	M1 A1(must show $\pm$. If penalized for b(i) no need to penalize for b(ii))
(c)	$\frac{3}{2h-k}-\frac{2k+1}{3(k-2h)}$ $=\frac{3}{2h-k}+\frac{2k+1}{3(2h-k)}$ $=\frac{9+2k+1}{3(2h-k)}$ $=\frac{10+2k}{3(2h-k)}$	M1 M1 A1
9	Refer to graph	
10(a)	Height $=\sqrt{5^2-4^2}$ $=3cm$	M1 A1
(b)	*Volume* $=\frac{1}{3}\pi(4)^2(3)+\pi(4^2)(7)$ $=50.265+351.8584$ $=402.1234$ $=402cm^3$	M1(volume of cone) M1(volume of cylinder) A1
(c)(i)	Beeswax as the burn time is the longest.	B1
(ii)		

	Beeswax: $402.1234 \times \frac{23}{30} = 308.2946$ $\sqrt[3]{308.2946}$ $= 6.7555$ $= 6.76cm$ Stearin: $402.1234 \times \frac{11.5}{18.5} = 249.9686$ $\sqrt[3]{249.9686}$ $= 6.29934$ $= 6.30cm$ Paraffin Wax: $402.1234 \times \frac{9}{16} = 226.1944$ $\sqrt[3]{226.1944}$ $= 6.092945$ $= 6.09cm$	M1 M1 A1 (Maximum marks for correct working and answer for stearin and paraffin wax is 2m)

For Examiner's Use Only

Qns	Marking Scheme	Marking Scheme
1a	$3-2x<13$ $-2x<10$ $x>-5$	B1
b	-4	B1
2(a)	$16+4k-28=0$ $k=3$	B1
(b)	$x^2+3x-28=0$ $(x-4)(x+7)=0$ $x=-7$	B1
3	$\frac{(6-2)\times180°}{6}=120°$ $360°-120°-90°$ $=150°$	M1 A1
4(a)	Maximum point	B1
(b)	$y=16-(-3)^2$ $y=7$	B1
5(a)	$3+2n$	B1
(b)	$3+2n=2892$ $n=1444.5$ n is not a whole number OR 1444th term is 2891 and 1445th term is 2893. Therefore, 2892 is not a term in the sequence OR All the terms are odd numbers and 2892 is not an odd number.	B1 (correct explanation)
6(a)	$2^3\times7^2$	B1
(b)	$k=7$	B1
(c)	$294=2\times3\times7^2$ $392=2^3\times7^2$ HCF $=2\times7^2=98$	B1