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FAJAR SECONDARY SCHOOL
2021 END-OF-YEAR EXAMINATIONS
SECONDARY 3 EXPRESS

7

CANDIDATE NAME

CLASS | INDEX NUMBER

MATHEMATICS

4048/01

Paper 1

4 October 2021

Setter: Mrs Li Geok Eng

1 hour 30 minutes

Candidates answer on the Question Paper.

READ THESE INSTRUCTIONS FIRST

Write your class, index number and name on all the work you hand in.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, 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 will result in loss of marks.
The use of an approved scientific calculator is expected, where appropriate.
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.

The number of marks is given in brackets [ ] at the end of each question or part question.
The total of the marks for this paper is 60.

For Examiner's Use	
Total	60

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This document consists of **13** printed pages and **1** blank page.

Mathematical Formulae

Compound interest

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

Mensuration

Curved surface area of a cone = πrl

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

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

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

Answer **all** the questions.

1 **(a)** Write $\frac{1}{49}$ as a power of 7.

Answer ..... [1]

(b) Given that $\frac{a \times a^4}{\sqrt{a}} = a^y$, find the value of y.

Answer $y =$ ..... [1]

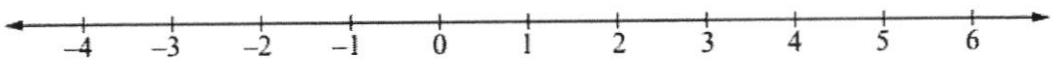
---

2 **(a)** Solve the inequality $2x - 1 \leq 11 < 3x + 5$.

Answer ..... [2]

(b) Represent your answer on a number line.

Answer



[1]

---

3 The table shows the information about the annual coffee production of some countries.

Country	Number of bags per year
Brazil	
Vietnam	5.8×10^6
India	2.75×10^6
Thailand	4.9×10^5

(a) Brazil produced 42 million bags of coffee.
Complete the table with the coffee production for Brazil, in standard form. [1]

(b) How many more bags of coffee were produced in Vietnam than in India?
Give your answer in standard form.

Answer ..... [2]

(c) The mass of a bag of coffee is 60 kg.
The total number of kilograms of coffee produced by the four countries can be written as k billion.
Find k.

Answer $k=$..... [2]

---

4 **(a)** Factorise $2x^2+3x-20$.

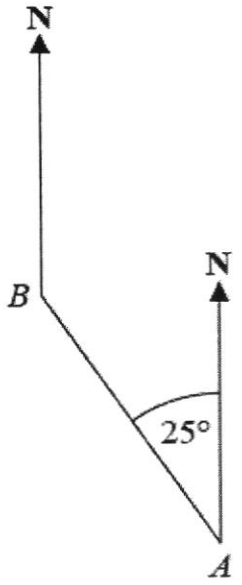
Answer ..... [1]

(b) Hence solve $2x^2+3x-20=0$.

Answer ..... [1]

---

5 The diagram shows the positions of two towns, A and B.



Albert says that the bearing of Town B from Town A is 025°.

(a) Explain why he is wrong.

.....

..... [1]

(b) Calculate the correct bearing of Town B from Town A.

Answer ..... [1]

(c) Calculate the bearing of Town A from Town B.

Answer ..... [1]

---

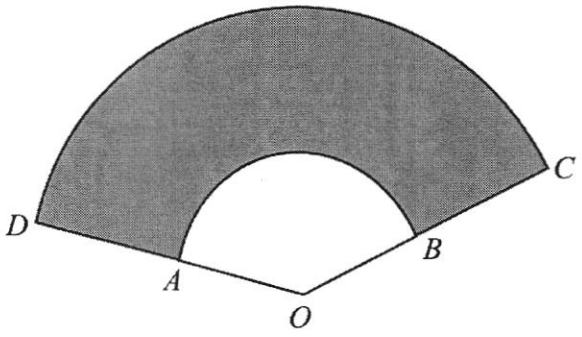
6 Factorise completely $xy+2ay-3ax-6a^2$.

Answer ..... [2]

---

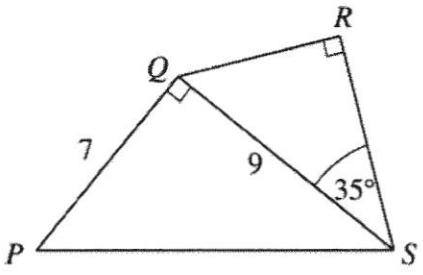
7 In the diagram, AB and DC are arcs of circles centre O with radii 20 cm and 45 cm respectively. Angle $AOB = 130°$.

Find the perimeter of the shaded region.



Answer ..... cm [2]

8



In the quadrilateral $PQRS$, $PQ = 7$ cm and $QS = 9$ cm.
Angle PQS = angle $QRS = 90°$ and angle $QSR = 35°$.

Calculate

(a) QR,

Answer ..... cm [1]

(b) angle RSP.

Answer ..... [2]

---

9 A is the point $(-3, 2)$ and B is the point $(12, -8)$.

(a) Find the equation of the line joining A and B.

Answer ..... [2]

(b) The equation of the line p is $3y + 2x = 1$.
Explain why the line p does not intersect the line AB.

.....

..... [2]

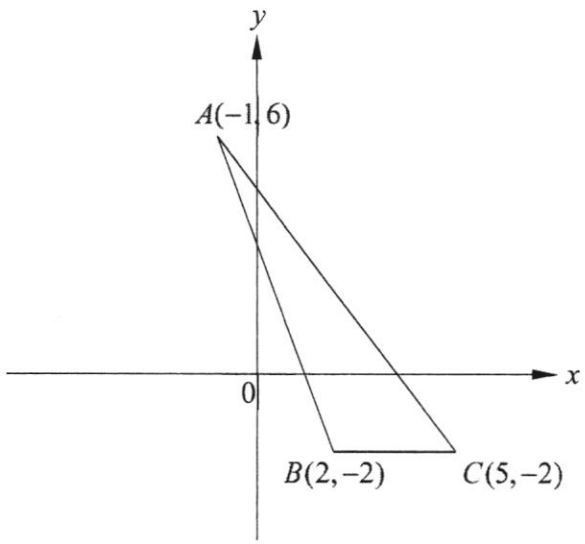
---

10 Solve the equation $(1-3x)^2 = 9-4x$.
Give your answers correct to 2 decimal places.

Answer $x =$ ..... or ..... [5]

---

11 The points $A(-1, 6)$, $B(2, -2)$ and $C(5, -2)$ are shown in the diagram.



(a) Given that $AB = \sqrt{p}$, find p.

Answer $p =$ ..... [2]

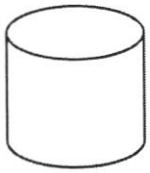
(b) Find the value of cos $\angle ABC$.

Answer ..... [2]

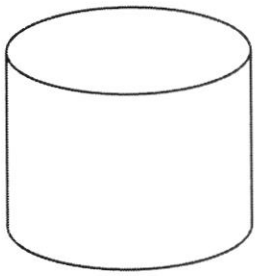
(d) The triangle ACD has line of symmetry $x = -1$.
Find the coordinates of D.

Answer (..... , ...) [1]

12 The curved surface areas of two geometrically similar cylinders are in the ratio of 4:25.



Volume = 45 cm^3



Curved surface area = 240 cm^2

Find

(a) the curved surface area of the smaller cylinder.

Answer ..... cm^2 [1]

(b) the ratio of the diameters of the cylinder.

Answer ..... : ..... [1]

(c) the volume of the larger cylinder.

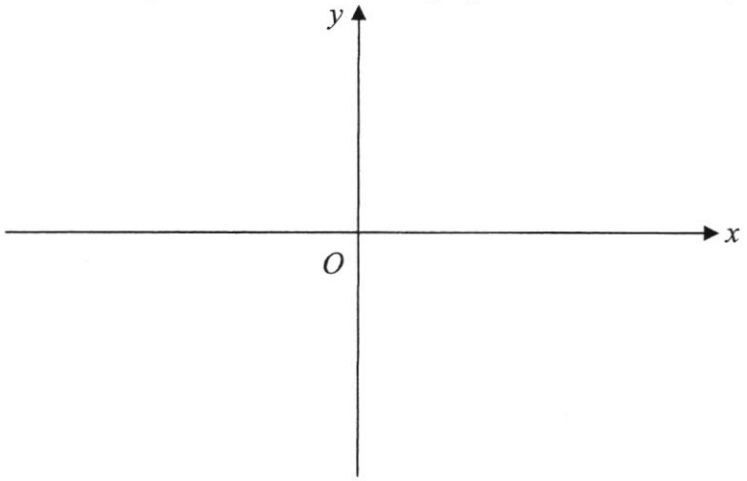
Answer ..... cm^3 [2]

[Turn over

13 (a) (i) **Sketch** the graph of $y = -(x-3)(x+1)$.

Indicate clearly the values where the graph crosses the x- and y-axes.

Answer



[2]

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

Answer ..... [1]

(b) Match each of the sketch graphs to one of these equations.

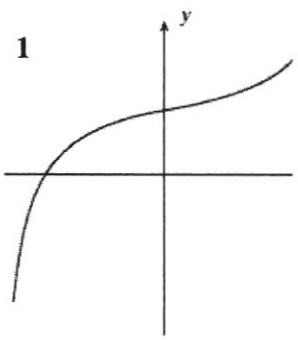
A $y = 2-2x$

B $y = 2x+2$

C $y = x^3+4$

D $y = \frac{2}{x}$

1



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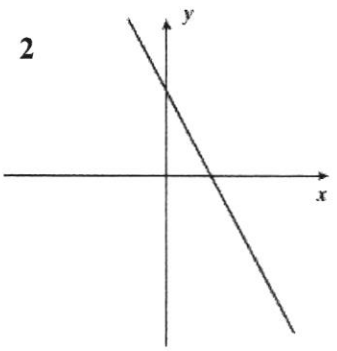
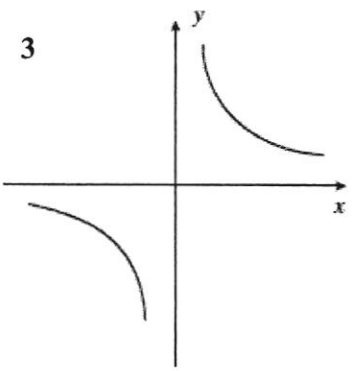


3

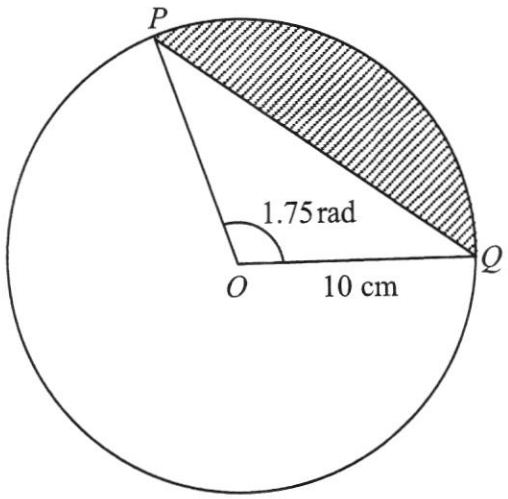


Answer Graph **1** represents equation .....

Graph **2** represents equation .....

Graph **3** represents equation ..... [3]

14



The diagram shows a circle, centre O, radius 10 cm.
Angle $POQ = 1.75$ radians.

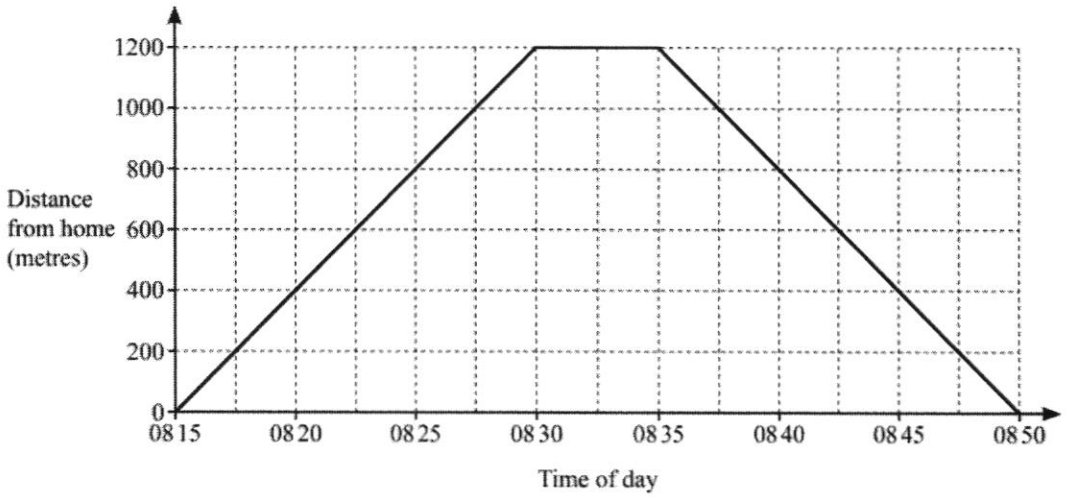
(a) Calculate the **reflex** angle POQ in radians.

Answer ..... [1]

(b) Hence find the area of the **unshaded** region.

Answer .....cm^2 [3]

15



The diagram shows the distance-time graph of Susie's journey from home to a supermarket and back again.

She leaves home at 08 15 and returns at 0850.

(a) How many minutes does she stay in the supermarket?

Answer ..... minutes [1]

(b) At 08 30, her brother leaves home and goes to the supermarket.
He walks at the same speed as Susie.

(i) On the grid, draw the graph of his journey to the shop. [1]

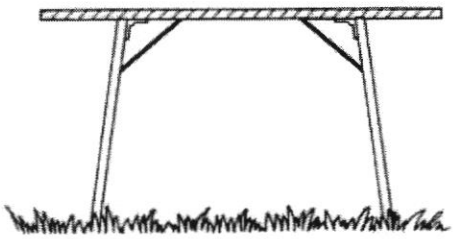
(ii) How far is he from the shop when they meet?

Answer ..... m [1]

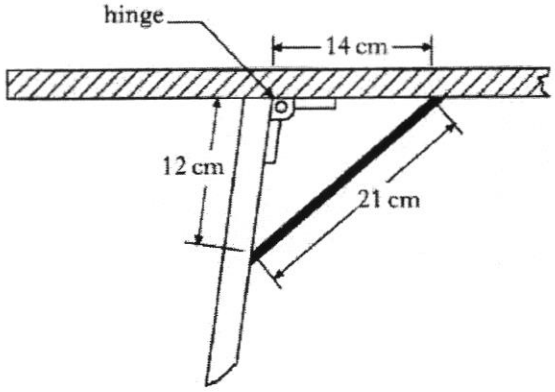
(c) Calculate the speed Susie walks home.
Give your answer in km/h

Answer ..... km/h [2]

16 The diagram shows a folding table.



Each leg of a folding table is prevented from opening too far by a metal bar.
The metal bar is 21 cm long.
It is fixed to the table top 14 cm from the hinge and to the table leg 12 cm from the hinge.



(a) Calculate the size of the obtuse angle which the table top makes with the leg.

Answer ..... [3]

(b) Given that the table leg is 77 cm long, calculate the height of the table.

Answer ..... [2]

END OF PAPER

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FAJAR SECONDARY SCHOOL
2021 END-OF-YEAR EXAMINATIONS
SECONDARY 3 EXPRESS

7

CANDIDATE NAME

CLASS | INDEX NUMBER

MATHEMATICS

4048/02

Paper 2

6 October 2021

Setter: Mrs Li Geok Eng

1 hour 30 minutes

Candidates answer on the Question Paper.

READ THESE INSTRUCTIONS FIRST

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

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

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

Statistics

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

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

Answer **all** the questions.

1 **(a)** Simplify $7p-2(p-3)$.

Answer ..... [1]

(b) Solve the inequality $\frac{5+4x}{3} \geq \frac{2x-1}{2}$.

Answer ..... [2]

(c) Simplify $\left(\frac{a^{15}}{27b^{6}}\right)^{-\frac{2}{3}}$.

Answer ..... [2]

(d) **(i)** Express $x^2 - 9x + 7$ in the form $(x - p)^2 + q$.

Answer ..... [2]

(ii) Hence solve $x^2 - 9x + 7 = 0$, giving your answer correct to two decimal places.

Answer $x =$ ..... or ..... [2]

2 **(a)** Mr Ong invested \$36 000 at 1.5% simple interest per year.
Calculate the total amount he will receive at the end of 2 years.

Answer \$ ..... [2]

(b) Mdm Sim bought an apartment for \$800 000.
She took a loan of 80% for the apartment from a bank for 3 years.
The bank charges an interest rate of 4% per annum compound interest compounded yearly.

Calculate
(i) the amount of the loan,

Answer \$ ..... [1]

(ii) the total interest charged by the bank for the 3 years.

Answer \$ ..... [3]

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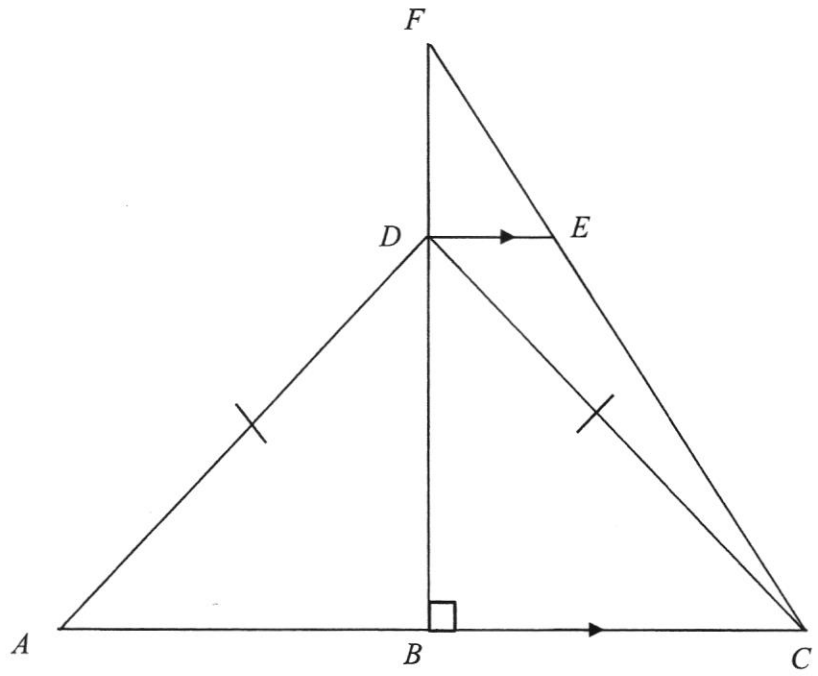
3 In the diagram below, ABC is a straight line.
DE is parallel to AC.
$AD = CD$ and angle $CBD = 90°$.



(a) Show that triangles ABD and CBD are congruent.
Give a reason for each statement you make.

.....

.....

.....

.....

.....

..... [3]

(b) **(i)** Show that triangles DEF and BCF are similar.
Give a reason for each statement you make.

.....

.....

.....

.....

.....

..... [2]

(ii) Given that $BC = 3DE$ and $EF = 4$ cm, find the length of CE.

Answer ..... [2]

4 A stamping machine produces either small or large bottle caps.

(a) The machine can produce x small bottle caps in 5 minutes.
Write down an expression, in terms of x, for the time to produce a small cap in seconds.

Answer ..... seconds [1]

(b) In 5 minutes, the machine can produce 20 more small bottle caps than large ones.
Write down an expression, in terms of x, for the time taken to produce a large bottle cap in seconds.

Answer ..... seconds [1]

The machine takes 1.25 seconds longer to produce a large bottle cap than a small bottle cap.

(c) Write down an equation in terms of x and show that it reduces to $x^2 - 20x - 4800 = 0$.

Answer

[3]

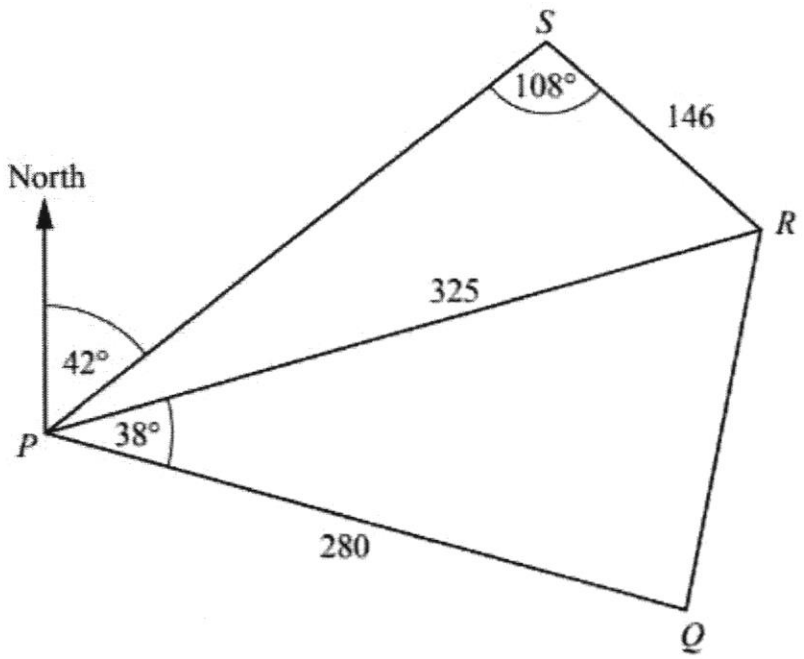
(d) Solve the equation $x^2 - 20x - 4800 = 0$.

Answer $x =$ ..... or ..... [3]

(e) Hence, find the number of small bottle caps that can be produced in 1 hour.

Answer ..... [2]

5



A field is in the shape of a quadrilateral $PQRS$.
A path crosses the field from P to R.
$PQ = 280$ m, $RS = 146$ m and $PR = 325$ m.
S is on a bearing of 042° from P, angle $PSR = 108°$ and angle $RPQ = 38°$.

(a) Calculate the bearing of R from P, giving your answer correct to the nearest degree.

Answer ..... [3]

(b) Lin runs from Q to R at a constant speed of 5.5 km/h.
Calculate the time she takes to run from Q to R.
Give your answer in minutes and seconds, correct to the nearest second.

Answer .....minutes .....seconds [4]

(c) A bird is at B, which is 25 m vertically above R.
Calculate the angle of depression of S from B.

Answer ..... [2]

6 The table below gives some values of x and the corresponding values of y, correct to one decimal place where

$$y = \frac{x^2}{8} + \frac{18}{x} - 5.$$

x	1	1.5	2	2.5	3	4	5	6
y	13.1	7.3	4.5	3.0	2.1	1.5	1.7	p

(a) Find the value of p.

Answer $p =$ ..... [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 $0 \leq x \leq 14$.

On your grid given on page 13, plot the points given in the table and join them with a smooth curve. [3]

(c) The equation $\frac{x^2}{8} + \frac{18}{x} = 11$ has only one solution.
Explain how this can be seen from your graph.

.....

..... [2]

(d) By drawing a tangent, estimate the gradient of the curve at $x = 2.5$.

Answer ..... [2]

(e) **(i)** On the same grid, draw the line $x + y = 12$. [2]

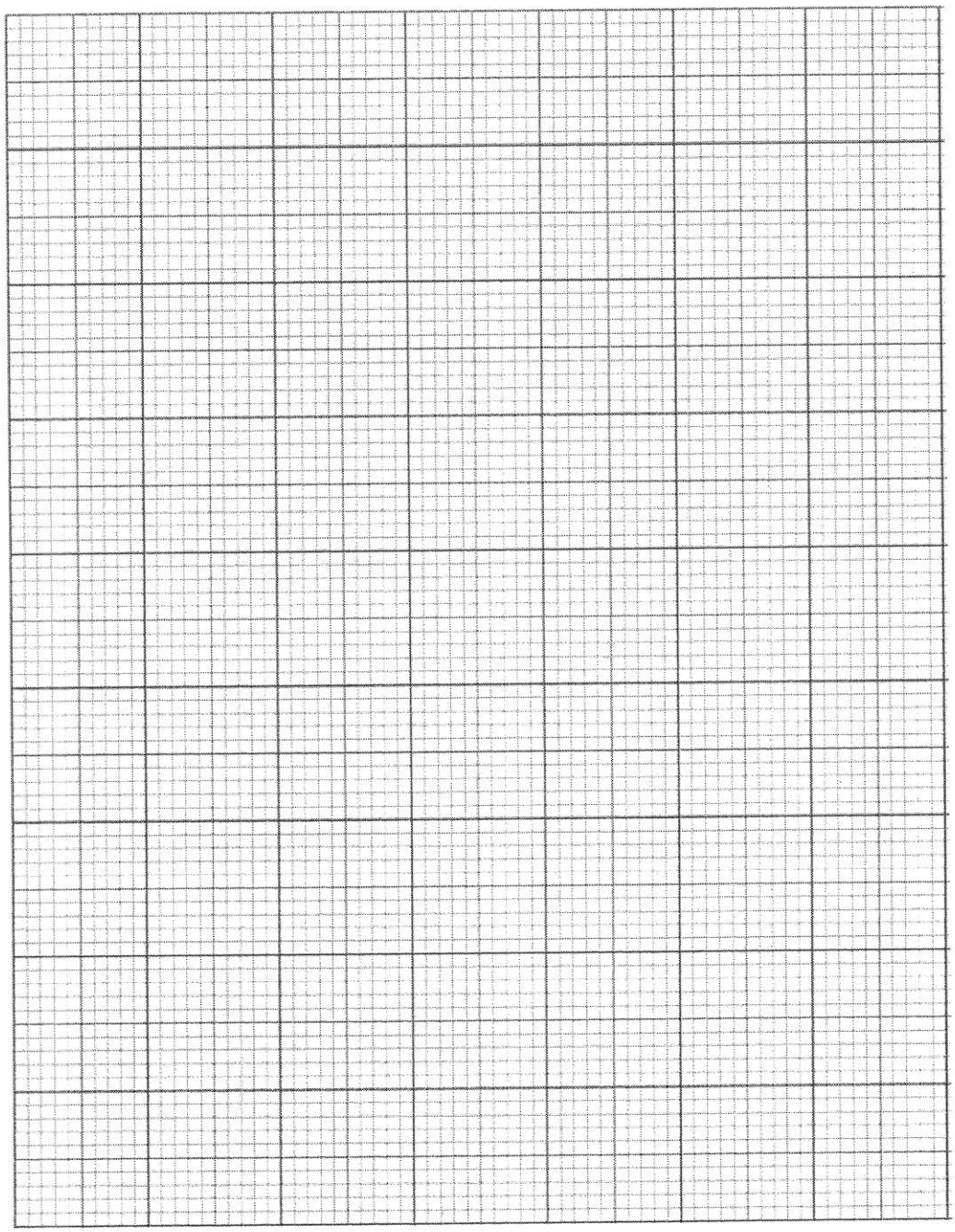
(ii) The x-coordinates of the points of intersection of this line and the curve are the solutions of the equation

$$x^3 + Ax^2 + Bx + 144 = 0.$$

Find the value of A and the value of B.

Answer $A =$ .....

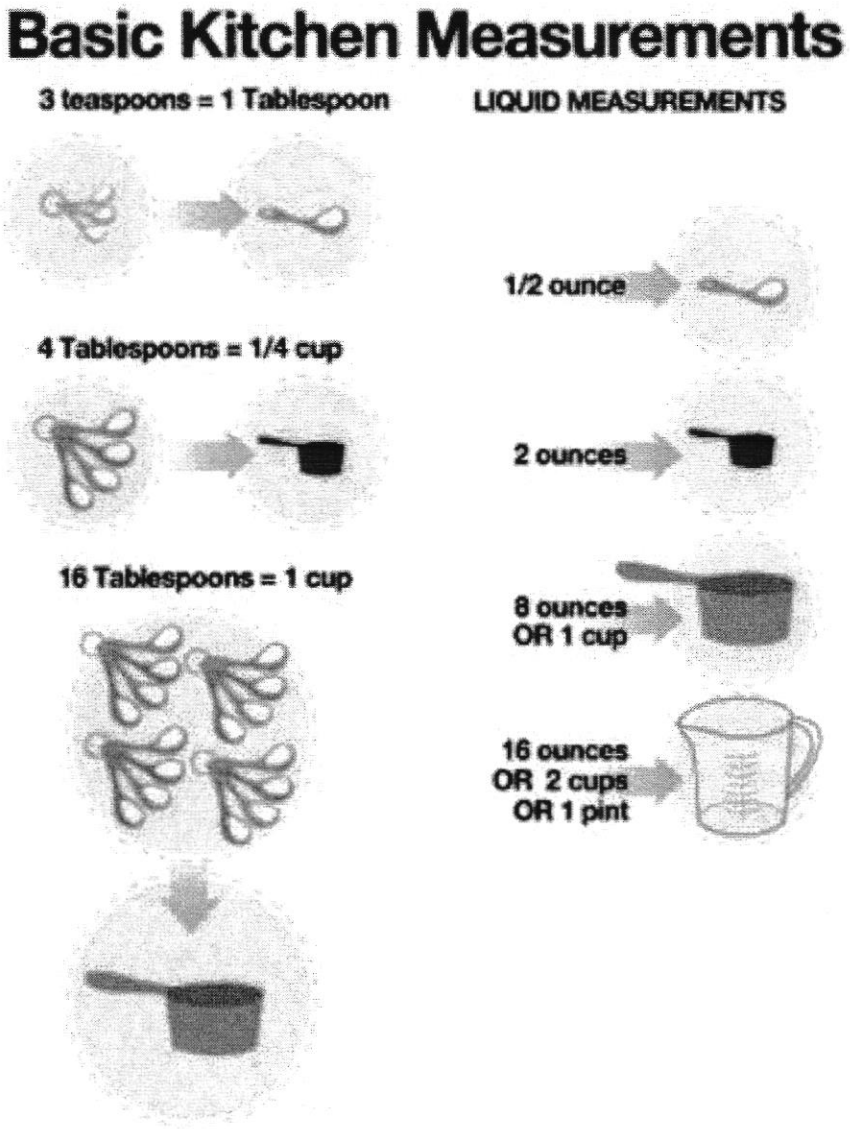
$B =$ ..... [2]



7 Susan wants to make the mango pudding for her family.
She downloaded the following recipe and conversion table from the internet.

Recipe for Mango Pudding

- ½ cup of boiled hot water
- 3 teaspoons of gelatin
- 6 tablespoons of honey
- 1 cup of evaporated milk
- 1¼ cup mango puree



Volume Conversion
1 cup = 240 ml
1 ml = 1 cm^3

Source: https://fivejs.com/cooking-measurement-and-conversion-chart/

(a) Calculate the amount of mango puree, in cm^3, needed for the recipe.

Answer ..... cm^3 [1]

(b) Find the volume of the pudding mixture, in cm^3, for the recipe.

Answer ..... cm^3 [2]

(c) Susan wants to serve her pudding using her porcelain hemispherical bowl of radius 5 cm for each adult and using plastic cup each with a capacity of 200 cm^3 for each child.

Susan fills all the hemispherical bowl to the brim and the plastic cup to 75% of its capacity. Determine if she has sufficient pudding mixture for her family of 4 adults and 2 children if she double the recipe. Show your workings clearly.

Answer

[4]

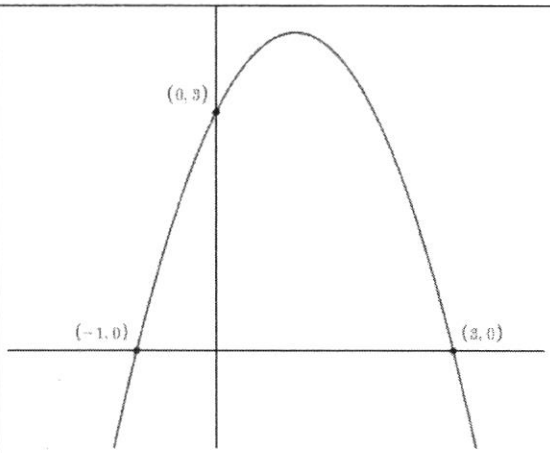
END OF PAPER

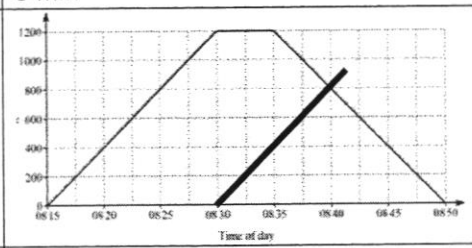
Fajar Secondary School
2021 Sec 3 Express EOY Exam
Mathematics Paper 1
Mark Scheme

Prepared by: Mrs Li Geok Eng

1(a)	7^{-2}	B1	
1(b)	$\frac{9}{2}$	B1	Accept 4.5
2(a)	$2x-1 \le 11 < 3x+5$ $2x-1 \le 11$ *or* $11 < 3x+5$ $x \le 6$ $x > 2$ $2 < x \le 6$	M1 A1	Any one correct
2(b)			
3(a)	4.2×10^{7}	B1	
3(b)	$5.8\times10^{6}-2.75\times10^{6}$ 3.05×10^{6}	M1 A1	
3(c)	51040000×60 3062400000 3.0624×10^{9} $k = 3.0624$ / 3.06	M1 A1	Total x 60 seen Accept both answers.
4(a)	$(2x-5)(x+4)$	B1	
4(b)	$x=\frac{5}{2}$ *or* $x=-4$	B1	
5(a)	Bearings are always measured clockwise from the North.	B1	
5(b)	335°	B1	
5(c)	155°	B1	
6	$xy+2ay-3ax-6a^2$ $=y(x+2a)-3a(x+2a)$ $=(x+2a)(y-3a)$	 M1 A1	 $(x+2a)$ seen

7	$\frac{130}{360}\times 2\pi(45)+\frac{130}{360}\times 2\pi(20)+25+25$ $=197.48$ $=197\text{cm}$	M1 A1	Perimeter
8(a)	$\frac{QR}{9}=\sin 35^\circ$ $QR=5.16\text{cm}$	 B1	
8(b)	$\angle PSQ=\tan^{-1}\left(\frac{7}{9}\right)=37.875^\circ$ $\angle RSP=35+37.875=72.9^\circ$	M1 A1	
9(a)	$gradient=\frac{-8-2}{12-(-3)}=-\frac{2}{3}$ $2=-\frac{2}{3}(-3)+c$ $c=0$ $y=-\frac{2}{3}x$	M1 A1	
9(b)	$3y+2x=12$ $y=-\frac{2}{3}x+4$ The line p and the line AB have the same gradient Line p // line AB Therefore, line p does not intersect the line AB.	 B1 B1	
10	$(1-3x)^2=9-4x$ $1-6x+9x^2=9-4x$ $9x^2-2x-8=0$ $x=\frac{-2\pm\sqrt{(-2)^2-4(9)(-8)}}{2(9)}$ $x=1.06$ *or* -0.84	 M1 M1 M1 A1 A1	 Expand correctly Form quadratic eqn Sub into quad formula Answers in 2 d.p.
11(a)	$AB^2=[6-(-2)]^2+[-1-2]^2=73$ $AB=\sqrt{\ }$ $\therefore p=73$	M1 A1	
11(b)	$-\frac{3}{\sqrt{73}}$	M1 A1	3 seen (3 units does not include length of BC) Allow ecf

11(c)	$(-7,-2)$	B1	
12(a)	$\frac{A}{240}=\frac{4}{25}$ $A=38.4\ \text{cm}^2$	B1	
12(b)	$\sqrt{\frac{4}{25}}=\frac{2}{5}$ Ratio is $2:5$	M1 A1	
12(c)	$\frac{45}{V}=\left(\frac{2}{5}\right)^3$ $V=\left(\frac{5}{2}\right)^3\times 45=703.125\ \text{cm}^3$	M1 A1	
13(a)(i)		C1 C1	Inverted U graph passing through (0,3) Cuts at $x=-1$ and $x=3$
13(a)(ii)	x = 1	B1	
13(b)	Graph 1: *C* Graph 2: *A* Graph 3: *D*	B1 B1 B1	
14(a)	Reflex angle $=2\pi-1.75$ $=4.5332$ $=4.53\,\text{rad}$	B1	
14(b)	$\frac{1}{2}(10)^2(2\pi-1.75)$ $+\frac{1}{2}(10)^2\sin(1.75)$ $=276\,\text{cm}^2$ OR Area of triangle $\frac{1}{2}(10)^2\sin(1.75)$ $=49.199\,\text{cm}^2$	M1 M1 A1 M1	Area of major sector POQ Area of triangle *POQ*

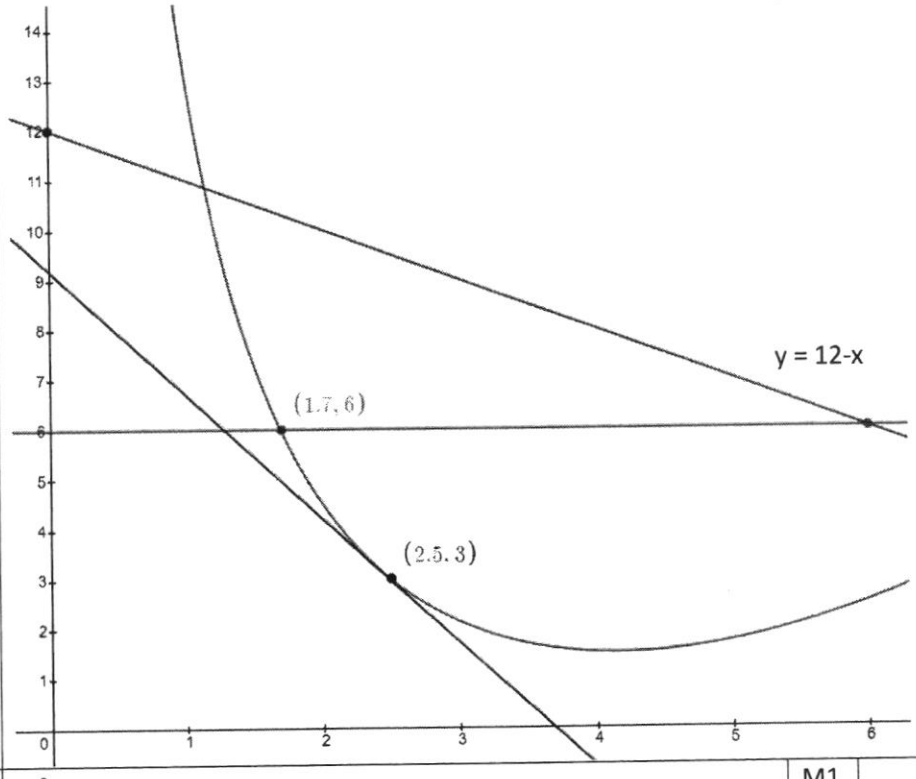
	Area of minor sector $\frac{1}{2}(10)^2(1.75)=8.5$ Area of shaded region $=87.5-49.1$ $=38.3$ Area of shaded unshaded region $=\pi r^2-38.3$ $=\pi(10)^2-38.3$ $=275.83$ $=276\ \text{cm}^3$	M1 A1	$38.3\ \text{cm}^2$ seen
15(a)	5 min	B1	
15(b)		B1	
	(ii) 400m	B1	
15(c)	$\frac{1.2}{0.25}$ $=4.8\,\text{km/h}$ Or $\frac{1200}{15}$ $=80m/\text{min}$ $\frac{80/1000}{1/60}=4.8km/h$	M1 A1 M1 A1	Convert distance to km and time to hour. $\frac{1200}{15}$ seen
16(a)	$\cos A=\frac{12^2+14^2-21^2}{2(12)(14)}$ $A=107.493°$ $A=107.5°$	M2 A1	M1 - correct sub for numerator or denominator
16(b)	$\frac{h}{77}=\sin 72.507°$ $h=77\times\sin 72.507°$ $h=73.4\ \text{cm}$	M1 A1	

Fajar Secondary School
2021 Sec 3 Express Mathematics
EOY Exam Paper 2
Mark Scheme
Prepare by: Mrs Li Geok Eng

1(a)	$7p-2(p-3)$ $=7p-2p+6$ $=5p+6$	 B1	
1(b)	$\frac{5+4x}{3} \geq \frac{2x-1}{2}$ $2(5+4x) \geq 3(2x-1)$ $10+8x \geq 6x-3$ $2x \geq -13$ $x \geq -\frac{13}{2}$	 M1 A1	
1(c)	$\left(\frac{a^{15}}{27b^6}\right)^{-\frac{2}{3}}$ $=\left(\frac{27b^6}{a^{15}}\right)^{\frac{2}{3}}$ $=\frac{9b^4}{a^{10}}$	 M1 A1	
1(d)(i)	$x^2-9x+7=\left(x-\frac{9}{2}\right)^2-\left(-\frac{9}{2}\right)^2+7$ $=\left(x-\frac{9}{2}\right)^2-13\frac{1}{4}$	 B1 B1	$p=\frac{9}{2}$ $q=13\frac{1}{4}$
1(e)(ii)	$\left(x-\frac{9}{2}\right)^2-13\frac{1}{4}=0$ $\left(x-\frac{9}{2}\right)=\pm\sqrt{13\frac{1}{4}}$ $x=0.86 \quad \text{or} \quad x=8.14$	 M1 A1	 $\left(x-\frac{9}{2}\right)=\pm\sqrt{13\frac{1}{4}}$ seen For both answers

2(a)	simple interest $= \frac{36000 \times 2 \times 1.5}{100} = \$1080$ total amount $= 3600 + 1080 = \$4680$	M1 A1	
2(b)(i)	\$640 000	B1	
2(b)(ii)	Total Amount $= 640\,000\left(1+\frac{4}{100}\right)^3$ Compound Interest $= 640\,000\left(1+\frac{4}{100}\right)^3 - 640\,000$ $= \$79\,912.96$	M1 M1 A1	Total amount found
3(a)	R : angle DBA = angle $DBC = 90^o$ $H : AD = CD$(Given) $S : DB$ is common triangle *ABD* and triangle *CBD* are congruent (RHS)	B2 B1	B1 – for any 2 correct statement.
3(b)(i)	$\angle DFE = \angle BFC$ (common angle) $\angle FDE = \angle FBC = 90^o$ (corresponding angles, DE//BC) $\angle FED = \angle FCB$ (corresponding angles, DE//BC) Triangle DEF is similar to triangle BCF (all 3 pairs of corresponding angles are equal)	B1 B1	Any 2 correct Conclusion
3(b)(ii)	$\frac{FC}{4} = \frac{3}{1}$ $FC = 12cm$ $CE = 12 - 4 = 8cm$	 M1 A1	Find FC
4(a)	$\frac{300}{x}$	B1	
4(b)	$\frac{300}{x-20}$	B1	
4(c)	$\frac{300}{x-20} - \frac{300}{x} = 1\frac{1}{4}$ $1200x - 1200(x-20) = 5x(x-20)$ $-5x^2 + 100x + 24000 = 0$ $x^2 - 20x - 4800 = 0$ (Shown)	M1 M1 A1	
4(d)	$x = \frac{-(-20) \pm \sqrt{(-20)^2 - 4(1)(-4800)}}{2(1)}$ $= 80$ or -60	M1 A1 A1	Or by factorisation
4(e)	12 x 80	M1	

	= 960 caps	A1	
5(a)	$\frac{\sin SPR}{146} = \frac{\sin 108}{325}$ $\sin SPR = \frac{\sin 108}{325} \times 146$ $SPR = 25.29$ 25.29+42 = 67.29 Bearing =067°	M1 M1 A1	Find angle SPR Find bearing Nearest degree, 3 digit.
5(b)	$QR^2 = 280^2 + 325^2 - 2 \times 280 \times 325 \times \cos 38$ $QR = 201.51$ $\frac{201.51}{1000 \times 5.5} \times 60 \times 60$ or $\frac{201.51\text{m}}{1.5277\text{ m/s}}$ 2 min 12 sec.	M2 M1 A1	Cosine rule Find time
5(c)	$\tan^{-1}\left(\frac{25}{146}\right)$ $= 9.7°$	M1 A1	

6(a)	2.5	B1	
6(b)	All 9 points plotted correctly Smooth curve, through all plotted points  	P2 C1	Allow P1 – 7 or 8 points correct.
6(c)	$\frac{x^2}{8}+\frac{18}{x}-5=6$ The line y = 6 cuts the curve $y=\frac{x^2}{8}+\frac{18}{x}-5$ at only one point.	M1 A1	
6(d)	Tangent drawn correctly. 2.0 to 2.5	M1 A1	
6(e)	Line with negative slope through (0,12) and (6,6)	L1 L1	
6(f)	$\frac{x^2}{8}+\frac{18}{x}-5=12-x$ $x^3+144-40x=96x-8x^2$ $x^3+8x^2-136x+144=0$ A = 8 and B = -136	M1 A1	Equate the curve and line and attempt to solve

<table>
<tr><td>7(a)</td><td>300 cm^3</td><td>B1</td><td></td></tr>
<tr><td>7(b)</td><td>
<table>
<tr><td>½ cup of boiled hot water</td><td>120 ml</td></tr>
<tr><td>3 teaspoons of gelatin</td><td>15 ml</td></tr>
<tr><td>6 tablespoons of honey</td><td>90 ml</td></tr>
<tr><td>1 cup of evaporated milk</td><td>240 ml</td></tr>
<tr><td>1¼ cups mango puree</td><td>300 ml</td></tr>
<tr><td>TOTAL</td><td>765 ml</td></tr>
</table>
</td><td>M1

A1</td><td>For 3 teaspoon = 15 ml and
6 tablespoon = 90ml</td></tr>
<tr><td>7(c)</td><td>Total pudding mixture = 1530 cm^3

$\text{adult} = \frac{2}{3} \times \pi \times 5^3 = 261.799$

$\text{children} = \frac{3}{4} \times 200 = 150$

Total pudding mixture required
$= 4 \times 261.799 + 2 \times 150$
$= 1350\text{cm}^3$

Yes, she has sufficient pudding mixture since the required pudding mixture for her family is less than the amount of pudding mixture.</td><td>M1

M1

M1

A1</td><td>Double the recipe

Volume of hemisphere

Total pudding mixture required

Conclusion.</td></tr>
</table>