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Geylang Methodist School (Secondary)

Mid-Year Examination 2014

Name			
Class		Index Number	

MATHEMATICS

Paper 1

1 Express

Candidates answer on the Question Paper.

1 hour

Setter : Mr Wong Kok Woei

15 May 2014

READ THESE INSTRUCTIONS FIRST

Write your name, index number and class on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

You may use a 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 will result in the loss of marks.

Calculators should be used where appropriate.

If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to 3 significant figures. Give answers in degrees to one decimal place.

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 50.

For Examiner's Use

50

This document consists of 10 printed pages.

[Turn over

Total Score: [50 marks]

Answer ALL questions in this paper.

- 1 (a) Written as a product of its prime factors, $9000 = 2^x \times 3^y \times 5^3$.
Find the values of x and of y .
- (b) Written as a product of its prime factors, $27000 = 2^3 \times 3^3 \times 5^3$.
Find the smallest positive integer k such that $27000k$ is a square number.

Ans: (a) $x =$ _____ [1] $y =$ _____ [1](b) $k =$ _____ [1]

- 2 (a) Calculate $\frac{23.54^2 - 3.245 \times 0.125}{5.354 - 2.115}$.

Write down the first five digits on your calculator display.

- (b) Write your answer to part (a) correct to 1 decimal place.

Ans: (a) _____ [1]

(b) _____ [1]

- 3 Written as the product of its prime factors $1440 = 2^5 \times 3^2 \times 5$.
- (a) Express 300 as the product of its prime factors.
- (b) Hence,
- (i) write down the lowest common multiple of 1440 and 300, giving your answer as the product of its prime factors,
- (ii) find the greatest integer that will divide both 1440 and 300 exactly.

Ans: (a) _____ [2]

b(i) _____ [2]

b(ii) _____ [2]

- 4 Red bean costs x cents per kilogram.
 Terry buys y dollars of red bean.
 Express the weight of the red beans, that Terry buys, in terms of x and y .

Ans: _____ kg [2]

- 5 Write as a single fraction in its simplest form $\frac{2x+5}{3} - \frac{3x-2}{5}$.

Ans: _____ [3]

- 6 (a) Express
- (i) $22\frac{1}{2}\%$ as a fraction in its simplest form,
 - (ii) 4 centimetres as a percentage of 8 metres.
- (b) Eric gained 21 marks out of 35 in a test.
Express this mark as a percentage.

Ans: a(i) _____ [1]

a(ii) _____ % [1]

(b) _____ % [1]

- 7 Without using a calculator, evaluate each of the following and express your answers in the simplest form. Show your working clearly. No marks will be given if no working is shown.

(a) $\frac{-15 - (-5) \times (-3)}{2 \times (-5)},$

(b) $\left(7 - 2 \times 2\frac{1}{3}\right) - 2\frac{1}{4}.$

Ans: (a) _____ [2]

(b) _____ [3]

8 Solve the following equations.

(a) $2(3p+2)=3(p-4),$

(b) $\frac{m+2}{6}=\frac{2m-2}{4}.$

Ans: (a) $p =$ _____ [2]

(b) $m =$ _____ [3]

9 Simplify

(a) $5d(d+3) - 3(5d-2),$

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

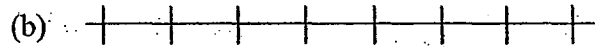
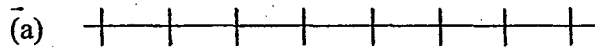
Ans: (a) _____ [2]

(b) _____ [3]

10 Solve the inequalities and show your solutions on the number lines below.

(a) $4x > 32$

(b) $-3x < 24$



Ans: (a) _____ [2]

(b) _____ [2]

11 A handphone is sold at \$484.50 after a discount of 15%.

(a) Find the marked price of the handphone.

(b) A further 6% discount is given for credit card payment. Find the amount payable if a customer makes payment using a credit card.

Ans: (a) \$ _____ [1]

(b) \$ _____ [1]

12 Factorise completely

(a) $5v - 20uv,$

(b) $ab - 3a + 2b - 6,$

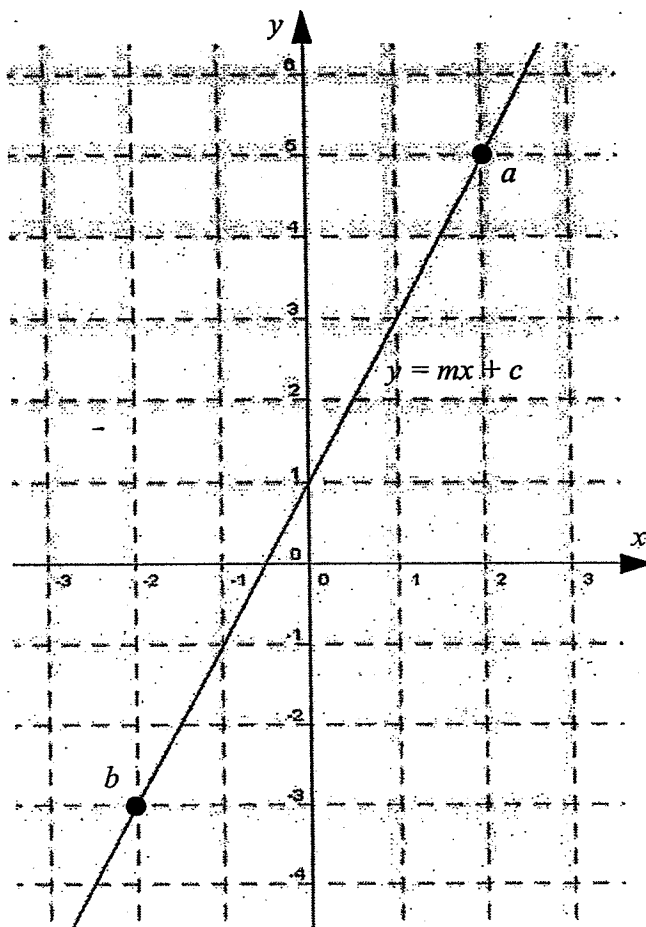
(c) $3mn - 2ab - an + 6mb.$

Ans: (a) _____ [1]

(b) _____ [2]

(c) _____ [3]

- 13 The figure below shows a linear graph in the form of $y = mx + c$.



- (a) Write down the coordinates of point a and point b .
(b) Find the value of m .

Ans: (a) $a =$ _____ [1]

$b =$ _____ [1]

(b) $m =$ _____ [2]

End of Paper



Geylang Methodist School (Secondary) Mid-Year Examination 2014

Name	Marking Scheme		
Class		Index Number	

MATHEMATICS

Paper 1

1 Express

Candidates answer on the Question Paper.

1 hour

Setter : Mr Wong Kok Woei

15 May 2014

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Answer **all** questions

If working is needed for any question, it must be shown with the answer.

Omission of essential working will result in the loss of marks.

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If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to 3 significant figures. Give answers in degrees to one decimal place.

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[Turn over

Total Score: [50 marks]

Answer ALL questions in this paper.

- 1 (a) Written as a product of its prime factors, $9000 = 2^x \times 3^y \times 5^3$.
Find the values of x and of y .
- (b) Written as a product of its prime factors, $27000 = 2^3 \times 3^3 \times 5^3$.
Find the smallest positive integer k such that $27000k$ is a square number.

a) $9000 = 2^3 \times 3^2 \times 5^3$ (division or factor tree method)

$$2^3 \times 3^3 \times 5^3 \times k$$

b) $2^4 \times 3^4 \times 5^4$
 $k = 2 \times 3 \times 5$
 $k = 30$

Ans: (a) $x = 3$ [1]

$y = 2$ [1]

(b) $k = 30$ [1]

- 2 (a) Calculate $\frac{23.54^2 - 3.245 \times 0.125}{5.354 - 2.115}$.
Write down the first five digits on your calculator display.
- (b) Write your answer to part (a) correct to 1 decimal place.

Ans: (a) 170.95 [1]

(b) 171.0 [1]

- 3 Written as the product of its prime factors $1440 = 2^5 \times 3^2 \times 5$.
- (a) Express 300 as the product of its prime factors.
- (b) Hence,
- write down the lowest common multiple of 1440 and 300, giving your answer as the product of its prime factors,
 - find the greatest integer that will divide both 1440 and 300 exactly.

a) $300 = 2^2 \times 3 \times 5^2$ (division or factor tree method) [1]

bi) $300 = 2^2 \times 3 \times 5^2$
 $1440 = 2^5 \times 3^2 \times 5$
 $\text{LCM} = 2^5 \times 3^2 \times 5^2$ [1]

bii) $300 = 2^2 \times 3 \times 5^2$
 $1440 = 2^5 \times 3^2 \times 5$
 $\text{HCF} = 2^2 \times 3 \times 5$ [1]

Ans: (a) $\underline{2^5 \times 3^2 \times 5^2}$ [2]

b(i) $\underline{7200}$ [2]

b(ii) $\underline{60}$ [2]

- 4 Red bean costs x cents per kilogram.
 Terry buys y dollars of red bean.
 Express the weight of the red beans, that Terry buys, in terms of x and y .

y dollars – $y \times 100$ cents [1]
 x cents – 1kg
 $y \times 100$ cents – $\frac{100y}{x}$ kg

Ans: $\underline{\frac{100y}{x}} \text{ kg}$ [2]

- 5 Write as a single fraction in its simplest form $\frac{2x+5}{3} - \frac{3x-2}{5}$.

$$= \frac{5(2x+5)}{15} - \frac{3(3x-2)}{15} \quad [1]$$

$$= \frac{10x+25}{15} - \frac{9x-6}{15}$$

$$= \frac{10x+25-9x+6}{15} \quad [1]$$

$$= \frac{x+31}{15}$$

Ans: $\frac{x+31}{15}$ [3]

- 6 (a) Express

(i) $22\frac{1}{2}\%$ as a fraction in its simplest form,

(ii) 4 centimetres as a percentage of 8 metres.

- (b) Eric gained 21 marks out of 35 in a test.

Express this mark as a percentage.

ai) $\frac{22\frac{1}{2}}{100} = \frac{9}{40}$

aii) $\frac{4}{800} \times 100 = 0.5\%$

b) $\frac{21}{35} \times 100 = 60\%$

Ans: a(i) $\frac{9}{40}$ [1]

a(ii) 0.5 % [1]

(b) 60 % [1]

7. Without using a calculator, evaluate each of the following and express your answers in the simplest form. Show your working clearly. No marks will be given if no working is shown.

(a) $\frac{-15 - (-5) \times (-3)}{2 \times (-5)},$

(b) $\left(7 - 2 \times 2\frac{1}{3}\right) - 2\frac{1}{4}.$

$$\text{a) } = \frac{-15 - (-15)}{-10} \quad [1]$$

$$= \frac{-30}{-10}$$

$$= 3$$

$$\text{b) } = \left(7 - 4\frac{2}{3}\right) - 2\frac{1}{4} \quad [1]$$

$$= 2\frac{1}{3} - 2\frac{1}{4}$$

$$= \frac{7}{3} - \frac{9}{4}$$

$$= \frac{28}{12} - \frac{27}{12} \quad [1]$$

$$= \frac{1}{12}$$

Ans: (a) 3 [2]

(b) $\frac{1}{12}$ [3]

8 Solve the following equations.

(a) $2(3p+2)=3(p-4),$

(b) $\frac{m+2}{6}=\frac{2m-2}{4}.$

a)

$$6p+4=3p-12 \quad [1]$$

$$6p-3p=-12-4$$

$$3p=-16$$

$$p=\frac{-16}{3}$$

$$p=-5\frac{1}{3}$$

b)

$$4(m+2)=6(2m-2)$$

$$4m+8=12m-12 \quad [1]$$

$$8+12=12m-4m$$

$$20=8m$$

$$\frac{20}{8}=m \quad [1]$$

$$m=2\frac{4}{8}$$

$$m=2\frac{1}{2}$$

Ans: (a) $p = \underline{-5\frac{1}{3}} \quad [2]$

(b) $m = \underline{2\frac{1}{2}} \quad [3]$

9 Simplify

(a) $5d(d+3)-3(5d-2),$

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

a)

$$= 5d^2 + 15d - 15d + 6 \quad [1]$$

$$= 5d^2 + 6$$

b)

$$= \frac{8(3+y)}{12} - \frac{3(2-y)}{12} \quad [1]$$

$$= \frac{24+8y}{12} - \frac{6-3y}{12}$$

$$= \frac{24+8y-6+3y}{12} \quad [1]$$

$$= \frac{18+11y}{12}$$

Ans: (a) $\underline{5d^2 + 6} \quad [2]$

(b) $\underline{\frac{18+11y}{12}} \quad [3]$

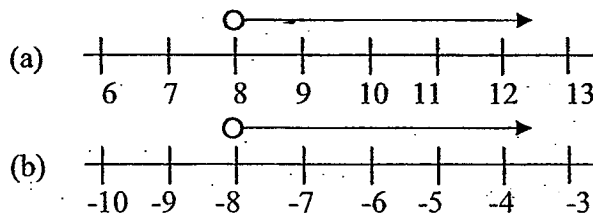
10 Solve the inequalities and show your solutions on the number lines below.

(a) $4x > 32$

(b) $-3x < 24$

a) $x > 8$

b) $-x < 8$
 $x > -8$



Ans: (a) $x > 8$ [2]

(b) $x > -8$ [2]

11 A handphone is sold at \$484.50 after a discount of 15%.

(a) Find the marked price of the handphone.

(b) A further 6% discount is given for credit card payment. Find the amount payable if a customer makes payment using a credit card.

a) 85% - \$484.50
 100% - \$570.00

b) $\$484.50 \times 0.94 = \455.43

Ans: (a) \$570.00 [1]

(b) \$455.43 [1]

12 Factorise completely

(a) $5v - 20uv,$

(b) $ab - 3a + 2b - 6,$

(c) $3mn - 2ab - an + 6mb.$

a) $= 5v(1 - 4u)$

b) $= a(b - 3) + 2(b - 3)$ [1]
 $= (a + 2)(b - 3)$

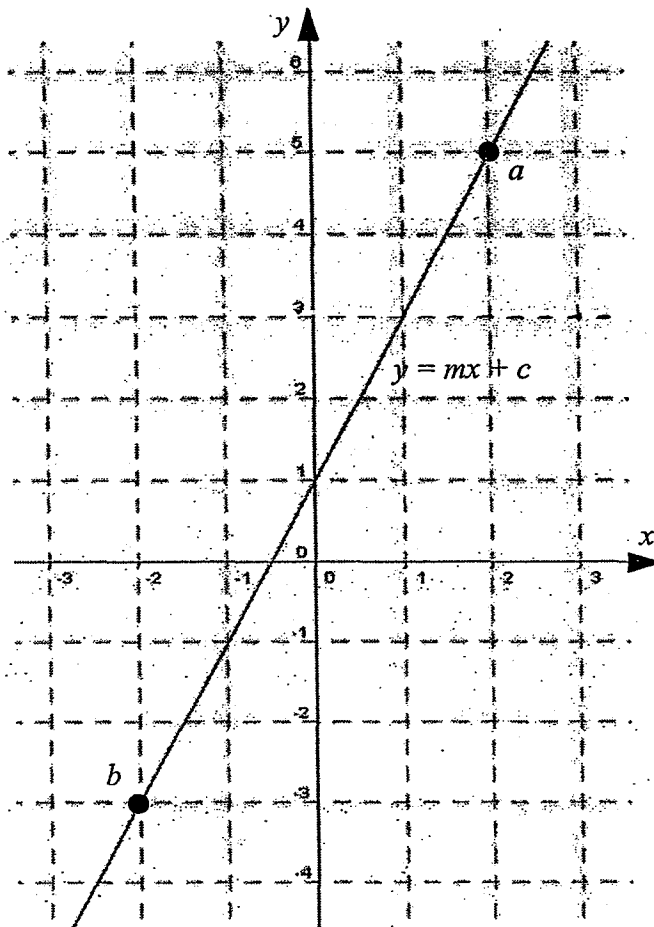
c) $= 3mn - 2ab + 6mb - an$
 $= 3mn + 6mb - 2ab - an$ [1]
 $= 3m(n + 2b) - a(2b + n)$ [1]
 $= (3m - a)(n + 2b)$

Ans: (a) $\underline{5v(1 - 4u)}$ [1]

(b) $\underline{(a + 2)(b - 3)}$ [2]

(c) $\underline{(3m - a)(n + 2b)}$ [3]

- 13 The figure below shows a linear graph in the form of $y = mx + c$.



- (a) Write down the coordinates of point a and point b .
 (b) Find the value of m .

c) $m = \frac{8}{4}$ [1]

Ans: (a) $a = \underline{(2, 5)}$ [1]

$b = \underline{(-2, -3)}$ [1]

(b) $m = \underline{2}$ [2]

End of Paper



Geylang Methodist School (Secondary) Mid - Year Examination 2014

MATHEMATICS

Paper 2

1 Express

Additional materials : Writing Paper
1 Graph Paper

1 hour 30 minutes

Setter : Ms Ng Siew Lee

14 May 2014

READ THESE INSTRUCTIONS FIRST

Write your name, index number and class on all the work you hand in.

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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 50.

Total Score: [50 marks]

- 1 A sum of money was divided between these people.

Angela received $\frac{1}{2}$ of the money.

Ben received $\frac{1}{3}$ of the money.

Charles received the remainder.

- (a) Ben received \$10. Find the amount of money Angela received. [2]
- (b) Find the fraction of money Charles received. [1]
-

- 2 (a) If p and q are factors of a number m , then the number pq is also a factor of the number m .
Give an example to show that the above statement is false. [2]
- (b) If m is the lowest common multiple of p and q , then m is divisible by the factors of both p and q .
Determine whether the above statement is always true or false. If it is true, explain your reasoning. If it is false, give a counterexample. [2]
-

- 3 In 2010, a train travelling from City A to City B made two trips a day. The average number of passengers on each trip was 400.
- (a) How many passengers did the train carry in one week? [1]
- (b) In 2011, the number of passengers per week was 5% higher than in 2010.
In 2012, the number of passengers per week was 10% higher than in 2011.
Find the percentage increase in the number of passengers from 2010 to 2012. [3]
-

- 4 Mr Lim has a rectangular piece of wood with dimensions 150 cm by 280 cm.
He wants to cut small squares of equal size from the piece of wood.
- (a) Find the largest possible length of the side of a square that he can cut without any wastage. [2]
- (b) Hence, find the number of squares he can cut from the wood. [2]
-

- 5 Three lightships flash at the same time at 3.50 a.m. The first lightship flashes every 12 seconds, the second lightship every 14 seconds and the third lightship every 20 seconds.
At what time will the three lightships next flash together? [3]
-

- 6 A company manufactures biscuits.
- (a) One batch of biscuits contains 300 grams of dried fruit. This consists of almonds and raisins, with masses in the ratio 2 : 3 respectively. Find the mass of the almonds. [2]
- (b) The mixture used to make one batch of biscuits has a mass of 20 kg. The mixture loses 15% of its mass when it is cooked to make the biscuits.
- (i) Calculate the mass of one batch of biscuits after it is cooked. [1]
- (ii) Each biscuit has a mass of 17 grams. One batch of biscuits is put into packets. Each packet contains 15 biscuits. Find the number of packets that can be filled, and the number of biscuits remaining. [2]
-

- 7 Ann is currently x years old. Her father is three times as old as she is.
- (a) Find, in terms of x , Ann's age and her father's age in five years' time. [2]
- In five years' time, their total age will be 58 years.
- (b) Using the above information, form an equation in x and hence, solve the equation. [2]
- (c) Find the current ages of both Ann and her father. [2]
- (d) Ann's brother, Austin, is 10 years younger than her. In how many years' time will Ann be twice as old as Austin? [2]
-

- 8 (a) Given that $\frac{2a+b}{2a-b} = \frac{3}{4}$ and $a = 3$, find the value of b . [3]
- (b) Express $1 + \frac{m-9}{6} - \frac{2(3m-1)}{3}$ as a single fraction in its simplest form. [3]

- 8 (c) A restaurant owner pays a waiter \$y per week based on the formula

$$y = a + \frac{11n}{10},$$

where a is constant and n is the number of customers he serves per week.

Given that the waiter received \$454 for serving 140 customers in a particular week,

- (i) find a . [2]

- (ii) Calculate the amount he received after serving 180 customers in one week. [1]

At the end of another week, the waiter received \$520.

- (iii) Find the number of customers he served in that week. [2]

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

The table below shows some values for the equation $y = 3 - 2x$.

x	-1	0	1	2	3	4
y	5	p	1	-1	q	-5

- (a) Calculate the value of p and of q . [2]

- (b) Using a scale of 2 cm to 1 unit for both axes, draw the graph $y = 3 - 2x$ for the values of x from -1 to 4. [3]

- (c) The point $(x, -1.2)$ lies on the graph. Find the value of x . [1]

- (d) On the same axes, draw the line of $x = 1.4$. Find the coordinates of the point of intersection of the two lines. [2]

----- End of Paper 2-----



Geylang Methodist School (Secondary) Mid - Year Examination 2014

MARKING SCHEME

MATHEMATICS

Paper 2

1 Express

Additional materials : Writing Paper
1 Graph Paper

1 hour 30 minutes

Setter : Ms Ng Siew Lee

14 May 2014

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The total number of marks for this paper is 50.

This document consists of 4 printed pages.

[Turn over

Total Score: [50 marks]

- 1 A sum of money was divided between these people.

Angela received $\frac{1}{2}$ of the money.

Ben received $\frac{1}{3}$ of the money.

Charles received the remainder.

- (a) Ben received \$10. Find the amount of money Angela received. [2]

1 unit — \$10
3 units — \$30

M1

Angela received $\left(\frac{1}{2} \times 30\right) = \15

A1

- (b) Find the fraction of money Charles received. [1]

Fraction of money Charles received $= 1 - \left(\frac{1}{2} + \frac{1}{3}\right) = \frac{1}{6}$ A1

- 2 (a) If p and q are factors of a number m , then the number pq is also a factor of the number m .

Give an example to show that the above statement is false. [2]

Suppose $p = 2$, and $q = 4$ and $m = 4$, then p and q are factors of 4 but 8 is not a factor of 4. [Any example that can refute the statement]

Able to give correct values of p , q and m [1M].

Able to explain [1M]

- (b) If m is the LCM of p and q , then m is divisible by the factors of both p and q .

Determine whether the above statement is always true or false. If it is true, explain your reasoning. If it is false, give a counterexample. [2]

The statement is true.

A1

This is because LCM of the numbers is divisible by each number, hence it must be divisible by the factors of each number.

A1

- 3 In 2010, a train travelling from City A to City B made two trips a day. The average number of passengers on each trip was 400.

- (a) How many passengers did the train carry in one week? [1]

No. of passengers per day $= 400 \times 2 = 800$

No. of passengers per week $= 800 \times 7 = 5600$

A1

- (b) In 2011, the number of passengers per week was 5% higher than in 2010.

In 2012, the number of passengers per week was 10% higher than in 2011.

Find the percentage increase in the number of passengers per week from 2010 to 2012. [3]

Number of passengers in 2011 = 105% of 5600 = 5880

Number of passengers in 2012 = 110% of 5880 = 6468 M1

Increase of passengers from 2010 to 2012 = 6468 - 5600 = 868 M1

Percentage increase = $\frac{868}{5600} \times 100\% = 15\frac{1}{2}\%$ A1

- 4 MrSen has a rectangular piece of wood with dimensions 150 cm by 280 cm. He wants to cut small squares of equal size from the piece of wood.

- (a) Find the largest possible length of the side of a square that he can cut without any wastage. [2]

$$\begin{array}{r|rr} 5 & 150 & 280 \\ 2 & 30 & 56 \\ \hline & 15 & 28 \end{array}$$

Largest possible length of the side of a square = $5 \times 2 = 10$ M1

- (b) Hence, find the number of squares he can cut from the wood. [2]

The number of squares can be cut = 15×28
= 420 M1
A1

- 5 Three lightships flash at the same time at 3.50 a.m. The first lightship flashes every 12 seconds, the second lightship every 14 seconds and the third lightship every 20 seconds.

At what time will the three lightships next flash together? [3]

$$12 = 2^2 \times 3, \quad 14 = 2 \times 7, \quad 20 = 2^2 \times 5$$

$$\text{LCM} = 2^2 \times 3 \times 7 \times 5 = 420 \text{ seconds}$$

$$420 \text{ sec} = 7 \text{ min}$$

They will leave the room again at 3.57 a.m. M1
M1
A1

6 A company manufactures biscuits.

- (a) One batch of biscuits contains 300 grams of dried fruit. This consists of almonds and raisins, with masses in the ratio 2 : 3 respectively. Find the mass of the almonds. [2]

$$5 \text{ units} \text{ ----- } 300 \text{ g}$$

M1

$$1 \text{ unit} \text{ ----- } 60 \text{ g}$$

$$2 \text{ units} \text{ ----- } 120 \text{ g}$$

$$\text{Mass of almonds} = 120 \text{ g}$$

A1

- (b) The mixture used to make one batch of biscuits has a mass of 20 kg. The mixture loses 15% of its mass when it is cooked to make the biscuits.

- (i) Calculate the mass of one batch of biscuits. [1]

$$\text{Mass of one batch of biscuits} = 85\% \text{ of } 20 \text{ kg} = 17 \text{ kg}$$

A1

- (ii) Each biscuit has a mass of 17 grams. One batch of biscuits is put into packets.
Each packet contains 15 biscuits. Find the number of packets that can be filled, and the number of biscuits remaining. [2]

$$17 \text{ kg} = 17000 \text{ g}$$

$$\text{Mass of 1 packets of biscuits} = 15 \times 17 = 255 \text{ g}$$

M1

$$17000 \div 255 = 66. \dots$$

$$\text{No. of packets} = 66 \text{ and the number of biscuits remaining} = 10$$

A1

7 Ann is currently x years old. Her father is three times as old as she is.

- (a) Find, in terms of x , Ann's age and her father's age in five years' time. [2]

$$\text{Ann's age} = x + 5$$

A1

$$\text{Father's age} = 3x + 5$$

A1

In five years' time, their total age will be 58 years.

- (b) Using the above information, form an equation in x and hence, solve the equation. [2]

$$x + 5 + 3x + 5 = 58$$

$$4x + 10 = 58$$

A1

$$4x = 48$$

$$x = 12$$

A1

- (c) Find the current ages of both Ann and her father. [2]

Ann's age is 12

A1

Father's age is 36

A1

- (d) Ann's brother, Austin, is 10 years younger than her. In how many years' time will Ann be twice as old as Austin? [2]
Let t be the number of years.

$$12 + t = 2(2 + t)$$

M1

$$12 + t = 4 + 2t$$

$$8 = t$$

A1

- 8 (a) Given that $\frac{2a+b}{2a-b} = \frac{3}{4}$ and $a = 3$, find the value of b . [3]

$$\frac{2(3)+b}{2(3)-b} = \frac{3}{4}$$

$$\frac{6+b}{6-b} = \frac{3}{4}$$

M1

$$4(6+b) = 3(6-b)$$

$$24 + 4b = 18 - 3b$$

M1

$$7b = -6$$

$$b = -\frac{6}{7}$$

A1

- (b) Express $1 + \frac{m-9}{6} - \frac{2(3m-1)}{3}$ as a single fraction in its simplest form. [3]

$$\frac{6}{6} + \frac{(m-9)}{6} - \frac{4(3m-1)}{6}$$

M1

$$= \frac{6 + (m-9) - (12m-4)}{6}$$

$$= \frac{6 + m - 9 - 12m + 4}{6}$$

M1

$$= \frac{1-11m}{6}$$

A1

- (c) A restaurant owner pays a waiter \$y per week based on the formula

$$y = a + \frac{11n}{10},$$

where a is constant and n is the number of customers he serves per week.

Given that the waiter received \$454 for serving 140 customers in a particular week,

- (i) find a . [2]

$$454 = a + \frac{11 \times 140}{10} \quad \text{M1}$$

$$454 = a + 154$$

$$a = 300 \quad \text{A1}$$

- (ii) Calculate the amount he received after serving 180 customers in one week. [1]

$$y = 300 + \frac{11 \times 180}{10} = 498$$

$$\text{Amt received} = \$498 \quad [1]$$

- (iii) At the end of another week, the waiter received \$520. Find the number of customers he served in that week. [2]

$$520 = 300 + \frac{11n}{10} \quad \text{M1}$$

$$220 = \frac{11n}{10}$$

$$n = \frac{2200}{11} = 200 \quad \text{A1}$$

Number of customers served = 200

- 9 The table below shows some values for the equation $y = 3 - 2x$.

x	-1	0	1	2	3	4
y	5	p	1	-1	q	-5

- (a) Calculate the values of p and q . [2]
- (b) Using a scale of 2 cm to 1 unit for both axes, draw the graph $y = 3 - 2x$ for $-1 \leq x \leq 4$. [3]
- (c) The point $(x, -1.2)$ lies on the graph. Find the value of x . [1]

- (d) On the same axes, draw the line of $x = 1.4$. Find the coordinates of the point of intersection of the two lines. [2]

