

Q1 (a) Abdullah and Jasmine bought a car for \$9000, Abdullah paid 45% of the \$9000 and Jasmine paid the rest.
 (i) How much did Jasmine pay towards the cost of the car? --- [2]
 (ii) Write down the ratio of the payments. Abdullah : Jasmine in its simplest form. --- [1]

(b) Last year it cost \$2256 to run the car. Abdullah, Jasmine and their son Hensri share this cost in the ratio 8:3:1. Calculate the amount each paid to run the car, --- Abdullah, \$ ---
 Jasmine \$ ---
 Hensri \$ --- [3]

SP-15/04/Q1

C(i) A new truck costs \$15000 and loses 23% of its value each year. Calculate the value of the truck after three years. --- [3]
 (ii) Calculate the overall percentage loss of the truck's value after three years. [3]

Q2 The number, P, of penguins in a colony, t years after 2000, is given by, $P = 2500 \times 1.02^t$
 (i) How many penguins were in the colony in the year 2000? --- [1]
 (ii) What information is given by 1.02 in the formula? --- [1]

(b) Using trial and improvement, or otherwise, find in which year the number of penguins in the colony will be first greater than 5000. [3]

SP-15/04/Q9

Q3 The Smith family paid \$5635 for a holiday in India. The total cost was divided in the ratio travel: accommodation: entertainment = 10:17:8
 (a) Calculate the percentage of the total cost spent on entertainment, --- [2]
 (b) Show that the amount spent on accommodation was \$2737, --- [2]
 (c) The \$5635 was the total amount Mr Smith received from an investment he made 5 years ago. Compound interest at a rate of 2.14% per year was paid. Calculate the amount he invested 5 years ago. --- [3]

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Q.3 (d) Mr Smith, his wife and their three children visit a theme park. The tickets cost 2500 rupees for an adult and 1650 rupees for a child. Calculate the total cost of the tickets. --- [2]

(e) One day the youngest child spent 130 rupees on sweets. On this day the exchange rate was 1 Rupee = \$ 0.0152. Calculate the value of sweets in dollars, correct to nearest cent. --- [2]

[M-17/42/Q1]

Q4 An energy company charged these prices in 2013.

Electricity price	Gas price
23.15 cent per day plus	24.5 cents per day plus
13.5 cents for each unit used	5.5 cents for each unit used

(a) (i) In 90 days, the Siddique family used 1885 units of electricity. Calculate the total cost, in dollars, of the electricity they used. --- [2]

(ii) In 90 days, the gas used by the Khan family cost \$ 198.16. Calculate the number of units of gas used. --- [3]

(b) In 2013, the price for each unit of electricity was 13.5 cents. Over the next 3 years, this price increased exponentially at a rate of 8% per year. Calculate the price for each unit of electricity after 3 years. --- [2]

(c) Over these 3 years, the price for each unit of gas increased from 5.5 cents to 7.7 cents.

(i) Calculate the percentage increase from 5.5 cents to 7.7 cents. --- [3]

(ii) Over 3 years, the 5.5 cents increased exponentially by the same percentage each year to 7.7 cents.

Calculate the percentage increase each year. --- [3]

(d) In 2015, the energy company divided its profits in the ratio, shareholders : bonuses : development = 5 : 2 : 6

In 2015, its profits were \$ 390 million.

[S-17/41/Q1]

Calculate the amount the company gave to shareholders. --- [2]

(e) The share price of the company in June 2015 was \$ 258.25

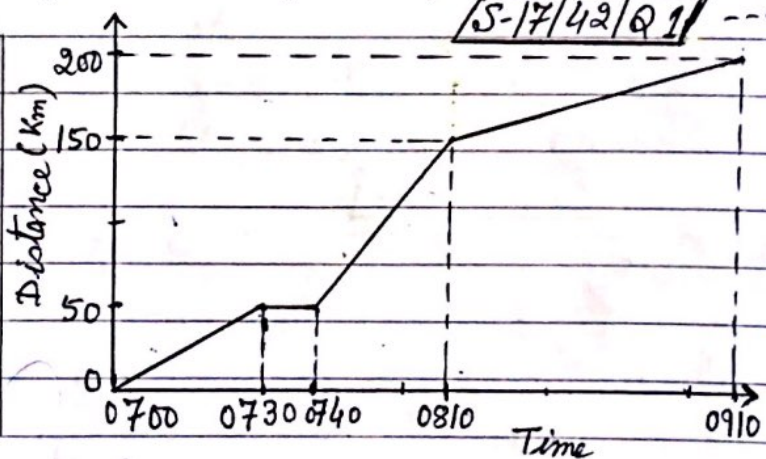
This was an increase of 3.3% on the share price in May 2015.

Calculate the share price in May 2015. --- [3]

- Q5 (a) Annie and Dermot share \$600 in the ratio 11:9.
- Show that Annie receives \$330. --- [1]
 - Find the amount that Dermot receives. --- [1]
- (b) (i) Annie invests \$330 at a rate of 1.5% per year-compound interest. Calculate the amount that Annie has after 8 years. Give your answer correct to the nearest dollar. --- [3]
- Find the amount of interest that Annie has, after the 8 years, as a percentage of the \$330. --- [2]
- (c) Dermot has \$70 to spend. He spends \$24.75 on a shirt. --- [1]
- Find \$24.75 as a fraction of \$70. Give your answer in its lowest terms.
 - The \$24.75 is the sale price after reducing the original price by 10%. Calculate the original price. --- [3]
- (d) After one year, the value of Annie's car had reduced by 20%. At the end of the second year, the value of Annie's car had reduced by a further 15% of its value at the end of the first year.
- Calculate the overall percentage reduction after two years. --- [2]
 - After three years the overall percentage reduction in the value of Annie's car is 40.84%. Calculate the percentage reduction in the third year. --- [2]

Q6

- (a) The distance-time graph shows the journey of a train.
- Find the speed of the train between 0700 and 0730. --- [1]
 - Find the average speed for the whole journey. --- [3]

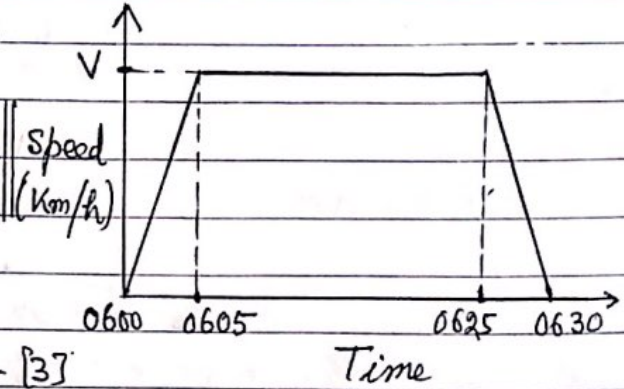


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Q 6(b) The speed-time graph shows the first 30 minutes of another train journey.

The distance travelled is 100 km.
The maximum speed of the train is V km/h.



(i) Find the value of V --- [3]

(ii) Find the acceleration of the train during the first 5 minutes.

Give your answer in m/s^2 .

S-17/42/Q9 --- [2]

Q 7(a) In 2016, a company sold 9600 cars, correct to the nearest hundred.

(i) Write down the lower bound for the number of cars sold, --- [1]

(ii) The average profit on each car sold was \$2430, correct to nearest \$10. Calculate the lower bound for the total profit. --- [2]

(iii) Write your answer to part (a) (ii) correct to 4 significant figures. --- [1]

(iv) Write your answer to part (a) (iii) in standard form, --- [1]

(b) In April, the number of cars sold was 546. This was an increase of 5% on the number of cars sold in March. Calculate the number of cars sold in March, --- [3]

(c) The price of a new car grows exponentially by 3% per year. A car has a price of \$3000 in 2013. Find the price of a new car 4 years later, --- [2]

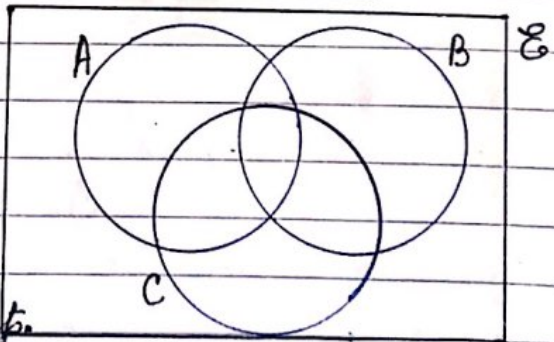
S-17/43/Q1

Q 7' $E = \{21, 22, 23, 24, 25, 26, 27, 28, 29, 30\}$

$A = \{x : x \text{ is a multiple of } 3\}$

$B = \{x : x \text{ is prime}\}$

$C = \{x : x \leq 25\}$



(a) Complete the Venn diagram --- [4]

(b) Use set notation to complete the statements.

(i) 26 ---- B

--- [1]

(ii) $A \cap B =$ ---

--- [1]

(c) List the elements of $B \cup (C \cap A)$

--- [2]

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- Q 7(d). Find (i) $n(C)$ --- [1]
(ii) $n(B' \cup (B \cap C))$ --- [1]

(e) $(A \cap C)$ is a subset of $(A \cup C)$

Complete this statement using set notation, $(A \cap C) \subseteq (A \cup C)$ [1]

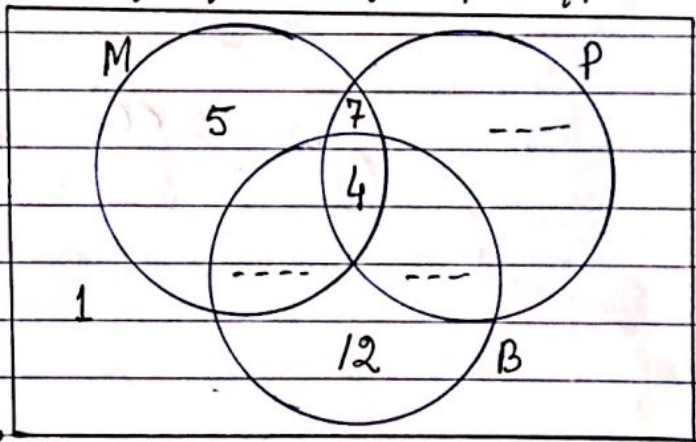
[S-17/43/Q10]

Q8 Aasha, Biren and Cemal share \$640 in the ratio 8:15:9

- (a) Show that Aasha receives \$160. --- [1]
(b) Calculate the amount that Biren and Cemal receive, --- [2]
(c) Aasha uses her \$160 to buy some books. Each book costs \$15.25. Find the greatest number of books that she can buy. --- [2]
(d) Biren spends $\frac{3}{8}$ of his share on clothes and $\frac{1}{3}$ of his share on a computer. Find the fraction of his share that he has left. Write your fraction in its lowest terms. [M-16/42/Q1] --- [3]

Q9(a) Davinder asked some people if they ate mangoes, pineapples or bananas last week.

- $M = \{ \text{people who ate mangoes} \}$
 $P = \{ \text{people who ate pineapples} \}$
 $B = \{ \text{people who ate bananas} \}$



The Venn diagram shows some of the information.

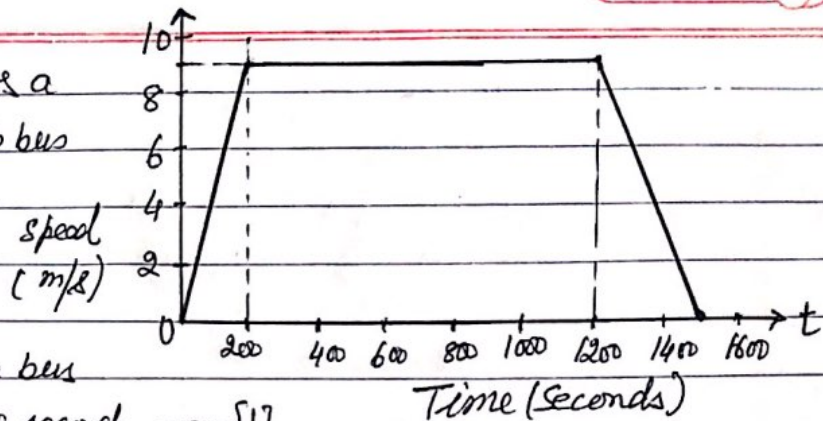
- 19 people said they ate mangoes.
6 people said they ate only pineapples.
18 people said they ate exactly two of the three types of fruit.

- (i) Write the three missing values in the Venn diagram. --- [3]
(ii) Find the total number of people Davinder asked, --- [1]
(iii) Find $n(M \cap P)$ --- [1]
(iv) One person is chosen at random from the people who ate mangoes. Write down the probability that this person also ate bananas. --- [2]

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Q9(b) Davinder draws a speed-time graph for his bus journey to the market.



Find:

- (i) The acceleration of the bus during the first 200 seconds. --- [1]
- (ii) the total distance travelled by the bus, --- [3]
- (iii) the average speed of the bus for the whole journey. --- [1]

M-16/42/Q3

Q10(a) Meena sells her car for \$6000. This is a loss of 4% on the price she paid. Calculate the price Meena paid for the car. --- [3]

(b) Eisha changes some euros (€) into dollars (\$) when the exchange rate is € = \$1.351. She receives \$6000. Calculate how many euros Eisha changes. Give your answer correct to nearest euro. --- [3]

(c) Meena and Eisha both invest their \$6000. Meena invests her \$6000 at a rate of 1.5% per year compound interest. Eisha invests her \$6000 in a bank that pays simple interest. After 8 years, their investments are worth the same amount. Calculate the rate of simple interest per year that Eisha received. --- [5]

M-16/42/Q5

Q11(a) Kristian and Stephanie share some money in the ratio 3:2. Kristian receives \$72.

- (i) Work out how much Stephanie receives. --- [2]
- (ii) Kristian spends 45% of his \$72 on a computer game. Calculate the price of the computer game. --- [1]
- (iii) Kristian also buys a meal for \$8.40. Calculate the fraction of the \$72 Kristian has left after buying the computer game and the meal. Give your answer in its lowest terms. --- [2]
- (iv) Stephanie buys a book in a sale for \$19.20. This sale price is after a reduction of 20%. Calculate the original price of the book. --- [3]

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Q 11(b) Boris invests \$550 at a rate of 2% per year simple interest. Calculate the amount Boris has after 10 years. --- [3]

(c) Marlene invests \$550 at a rate of 1.9% per year compound interest. Calculate the amount Marlene has after 10 years. [2]

(d) Hans invests \$550 at a rate of $x\%$ per year compound interest. At the end of 10 years he has a total amount of \$638.30, correct to the nearest cent. Find the value of x . --- [3]

S-16/41/Q1

Q 12 Mr Chan flies from London to Los Angeles, a distance of 8800 km. The flight takes 11 hours and 10 minutes.

(a) (i) His plane leaves London at 09:35 local time. The local time in Los Angeles is 8 hours behind the time in London.

Calculate the local time when the plane arrives in Los Angeles. --- [2]

(ii) Work out the average speed of the plane in km/h. --- [2]

(b) There are three types of tickets, economy, business and first class. The price of these tickets is in the ratio: economy: business: first class = 2:5:9

(i) The price of business ticket is \$2350. Calculate the price of a first class ticket. --- [2]

(ii) Work out the price of an economy ticket as a percentage of the price of a first class ticket. --- [1]

(c) The price of a business ticket for the same journey with another airline is \$2240.

(i) The price of first class ticket is 70% more than a business ticket. Calculate the price of this first class ticket. --- [2]

(ii) The price of business ticket is 180% more than an economy ticket. Calculate the price of this economy ticket. --- [3]

(d) Mr Chan hires a car in Los Angeles. The charges are shown below:

Car Hire

\$28.00 per day plus \$6.50 per day insurance.
\$1.25 for every kilometre travelled after the first 800 km.
The first 800 km are included in the price.

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Q12(d) Mr Chan hired the car for 12 days and paid \$826.50.

(i) Find the number of km Mr Chan travelled in this car. -- [4]

(ii) The car used fuel at an average rate of 1 litre for every 10 km travelled. Fuel costs \$1.30 per litre.

Calculate the cost of fuel used by the car during the 12 days. -- [2]

S-16/42/Q1

Q13 A football club sells tickets at different prices dependent on age group.

(a) (i) At one game, the club sold tickets in the ratio:

under 18 : 18 to 60 : over 60 = 2 : 7 : 3

There were 6100 tickets sold for the people aged under 18.

Calculate the total number of tickets sold for the game. -- [3]

(ii) Calculate the percentage of tickets sold for people aged under 18. -- [1]

(b) The table shows the football ticket prices for different age groups:

At a different game there were 42 600 tickets sold.

Age	Price
under 18	\$15
18 to 60	\$35
Over 60	\$18

• 14% were sold to people aged under 18.

• $\frac{2}{3}$ of the tickets were sold to people aged 18 to 60.

• The remainder were sold to people aged over 60.

Calculate the total amount the football club receives from ticket sales for this game. -- [5]

(c) In a sale, the football club ^{shop} reduced the price of the football shirts to \$23.80. An error was made when working out this sale price. The price was reduced by 30% instead of 20%. Calculate the correct sale price for the football shirt. -- [5]

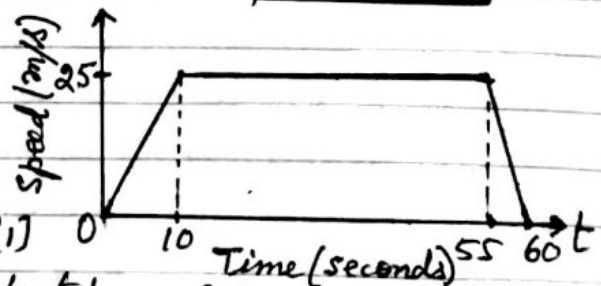
S-16/43/Q1

Q14 A cheetah runs for 60 seconds.

The diagram shows the speed-time graph.

(i) Work out the acceleration of the cheetah during first 10 seconds. -- [1]

(ii) Calculate the distance travelled by cheetah. -- [3]



S-16/43/Q7(b)

- Q15(a)(i) Divide \$105 in the ratio 4:3 ---[2]
- (ii) Increase \$105 by 12%. ---[2]
- (iii) In a sale the original price of a jacket is reduced by 16% to \$105. Calculate the original price of the jacket. ---[3]
- (b) Jakob invests \$500 at a rate of 2% per year compound interest. Claudia invests \$500 at a rate of 2.5% per year simple interest. Calculate the difference between these two investments after 30 years. Give your answer in dollars correct to the nearest cent. ---[6]
- (c) Michel invests \$P at a rate of 3.8% per year compound interest. After 30 years the value of this investment is \$1469. Calculate the value of P. ---[3]
- (d) The population of a city increases exponentially at a rate of $x\%$ every 5 years. In 1960 the population was 60 100. In 2015 the population was 120 150. Calculate the value of x . W-16/41/Q1 ---[3]

- Q16(a)(i) Each year the value of a car decreases by 15% of its value at the beginning of that year. Alberto buys a car for \$18 000. Calculate the value of Alberto's car after 3 years. ---[2]
- (ii) Belinda bought a car one year ago. The value of this car has decreased by 15% to \$14 025. Calculate how much Belinda paid for the car. ---[3]
- (b) Chris invested some money at a rate of 5% per year compound interest. After 2 years the value of this investment is \$286.65. Calculate how much Chris invested. ---[2]
- (c) Dani invested \$200 and after 2 years the value of this investment is \$224.72. Calculate the rate of interest per year when the interest is:
- (i) Simple ---[3]
- (ii) Compound ---[3]
- W-16/42/Q1

- Q17 (a) A jigsaw puzzle has edge pieces and inside pieces.
The ratio, edge pieces : inside pieces = 3 : 22
- (i) There are 924 inside pieces.
Calculate the total number of pieces in the puzzle. --- [2]
- (ii) Find the percentage of total number of pieces that are edge pieces. --- [1]
- (iii) Anjum and Betty spent a total of 9 hours completing the puzzle.
The ratio Anjum's time : Betty's time = 7 : 5
Work out how much time Anjum spent on the puzzle. --- [2]
- (b) The price of the puzzle was \$15.99 in a sale. This was 35% less than the original price.
Calculate the original price of the puzzle. --- [3]
- (c) Betty takes a photograph of the completed puzzle.
The photograph and the completed puzzle are mathematically similar.
The area of the photograph is 875 cm^2 and the area of the puzzle is 2835 cm^2 .
The length of the photograph is 35 cm.
Work out the length of the puzzle. --- [3]
- (d) (i) The area of another puzzle is 6610 cm^2 .
Change 6610 cm^2 into m^2 . --- [1]
- (ii) The cost price of the puzzle is \$12.50. The selling price is \$18.50
Calculate the profit percentage. W-16/43/Q1 --- [3]

Q18 (a) Complete the table for the four sequences A, B, C and D. --- [10]

	Sequence	Next term	n^{th} term
A	2 5 8 11		
B	20 14 8 2		
C	1 4 9 16		
D	0 2 6 12		

(Continued →)

- Q18(b) The sum of the first n terms of a sequence is $\frac{n(3n+1)}{2}$
- (i) When the sum of n terms is 155, show that $3n^2 + n - 310 = 0$ --- [2]
 - (ii) Solve $3n^2 + n - 310 = 0$ --- [3]
 - (iii) Complete the statement.
The sum of first --- terms of this sequence is 155. [1]

W-16/43/Q10

- Q19 Jaideep builds a house and sells it for \$450,000
- (a) He pays a tax of 1.5% of the selling price of the house. show that he pays \$6750 in tax. --- [1]
 - (b) \$6750 is 12.75% more than the tax Jaideep paid on the first house he built. Calculate the tax Jaideep paid on the first house he built. --- [3]
 - (c) The house is built on a rectangular plot of land, 21m by 17m, both correct to the nearest metre. Calculate the upper bound for the area of the plot. --- [2]
 - (d) On a plan of the house, the area of the kitchen is 5.6 cm^2 . The scale of the plan is 1:200. Calculate the actual area of the kitchen in square metres. --- [2]
 - (e) The house was built using cuboid blocks each measuring 12cm by 16cm by 27cm. Calculate the volume of one block. --- [2]
 - (f) Jaideep changes \$12,000 into euros (€) to buy land in another country. The exchange rate is €1 = \$1.33. Calculate the number of euros Jaideep receives. Give your answer correct to the nearest euro. --- [3]

M-15/42/Q1

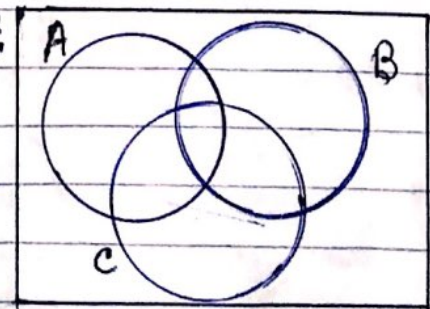
- Q20 (a) x is an integer.
 $E = \{x : 1 \leq x \leq 10\}$
 $A = \{x : x \text{ is a factor of } 12\}$
 $B = \{x : x \text{ is an odd number}\}$
 $C = \{x : x \text{ is a prime number}\}$

(i) Complete the Venn diagram to show this information. --- [3]

(ii) Use set notation to complete each statement,

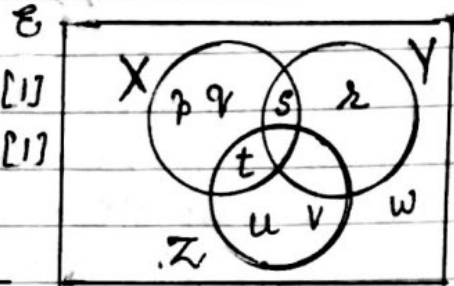
$6 \dots A$; $A \cap B \cap C = \dots$, $A \cap A' = \dots$ --- [3]

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Q20(a)(iii) Find $n(B)$

- (b) (i) Use set notation to complete the statement. $\{u, v\} \dots Z$ --- [1]
 (ii) Shade $X \cap (Z \cup Y)'$ --- [1]



M-15/42/Q2

Q21 12000 vehicles drive through a road toll on one day.

The ratio cars : trucks : motorcycles = 13 : 8 : 3

- (a) (i) Show that 6500 cars drive through the road toll on that day. --- [1]
 (ii) Calculate the number of trucks that drive through the road toll on that day. --- [1]
 (b) The toll charges in 2014 are shown in the table:

Show that the total amount paid in tolls on that day is \$34500

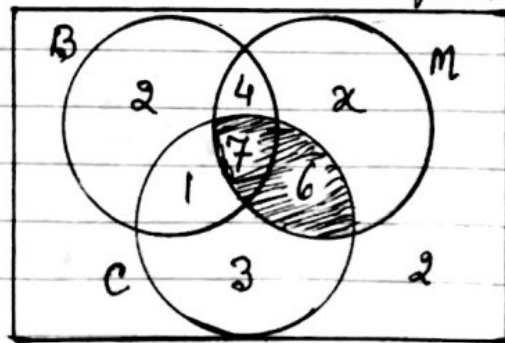
Vehicle	Charge
Cars	\$2
Trucks	\$5
Motorcycles	\$1

- (c) This total amount is a decrease of 8% on the total amount paid on the same day in 2013. Calculate the total amount paid on that day in 2013. --- [3]
 (d) 2750 of 6500 car drivers pay their toll using a credit card. Write down, in its simplest terms, the fraction of car drivers who pay using a credit card. --- [2]
 (e) To the nearest thousand, 90000 cars drive through the road toll in one week. Write down the lower bound for this number of cars. --- [1]

Q22

30 students were asked if they had a bicycle (B), a mobile phone (M) and a computer (C). The results are shown in the Venn diagram.

- (a) Work out the value of x --- [1]
 (b) Use set notation to describe the shaded region in the Venn diagram. --- [1]
 (c) Find $n(C \cap (M \cup B)')$ --- [1]
 (d) A student is chosen at random,

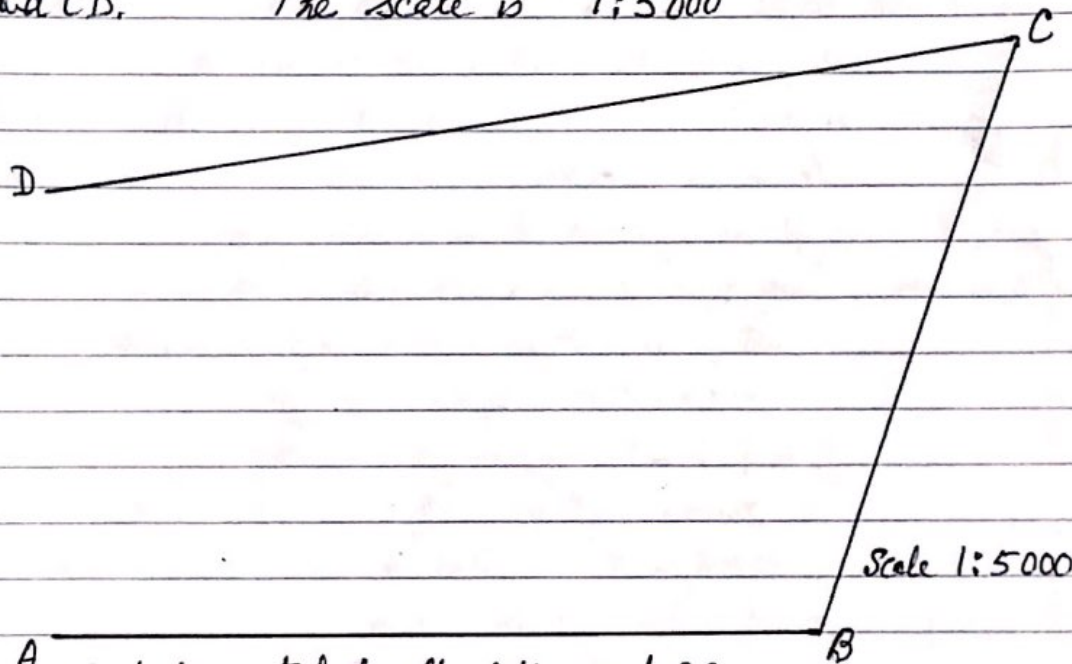


- (i) Write down the prob. that the student is a member of the set M' . --- [1]
 (ii) Write down the prob. that the student has a bicycle. --- [1]
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Q 22 (c) Two students are chosen at random from the students who have computers. Find the prob. that each of those students has a mobile phone but no bicycle. S-15/41/Q4 --- [3]

Q 23 The diagram is a scale drawing of three straight roads, AB, BC and CD. The scale is 1:5000



(a) Find the actual length of the road BC. Give your answer in metres. --- [2]

(b) Another straight road starts at M, the midpoint of AB. The road is perpendicular to AB and it meets the road CD at X. Using a straight edge and compasses only, construct MX. --- [2]

(c) There is a park in the area enclosed by four roads. The park is

- less than 290 m from B
- and • nearer to CD than to CB.

Using a ruler and compasses only, construct the boundaries of the park.

Leave in all your construction arcs and label the park P. --- [5]

S-15/41/Q10

- Q24(a) A library has a total of 10494 fiction and non-fiction books.
The ratio fiction books : non-fiction books = 13 : 5
Find the number of non-fiction books library has. --- [2]
- (b) The library has DVDs on crime, adventure and science fiction.
The ratio crime : adventure : science fiction = 11 : 6 : 10
The library has 384 more science fiction DVDs than adventure DVDs.
Calculate the number of crime DVDs the library has. --- [2]
- (c) Every Monday, Sima travels by car to the library.
The distance is 20 km and the journey takes 23 minutes.
- (i) Calculate the average speed for the journey in km/h. --- [2]
- (ii) One Monday, she is delayed and her average speed is reduced to 32 km/h.
Calculate the percentage increase in the journey time. --- [5]
- (d) In Spain, the price of a book is 11.99 euros.
In the USA, the price of the same book is \$ 12.99
The exchange rate is \$1 = 0.9276 euros.
Calculate the difference between these prices.
Give your answer in dollars, correct to the nearest cent. --- [3]
- (e) 7605 books were borrowed from the library in 2016.
This was 22% less than in 2015.
Calculate the number of books borrowed in 2015. --- [3]

W-17/41/Q1

- Q25(a) Alex has \$20 and Bobbie has \$25.
- (i) Write down the ratio Alex's money : Bobbie's money in its simplest form.
- (ii) Alex and Bobbie each spend $\frac{1}{5}$ of their money. Find the ratio Alex's remaining money : Bobbie's remaining money in its simplest form. --- [1]
- (iii) Alex and Bobbie then each spend \$4. --- [1]
- Find the new ratio Alex's remaining money : Bobbie's remaining money in its simplest form. --- [2]
- (b) (i) The population of 15600 was 2.5% less than the population in the year 1980. Calculate the population in 1980. --- [3]
- (ii) The population of a town in the year 1990 was 15600. The population is now 11420. Calculate the percentage decrease in the population. --- [3]
(continued →)

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Q 25 (C) Chris invests \$200 at a rate of $x\%$ per year simple interest. At the end of 15 years the total interest received is \$48. Find the value of x . -- [2]

(d) Dani invests \$200 at a rate of $y\%$ per year compound interest. At the end of 10 years the value of her investment is \$256. Calculate the value of y , correct to 1 decimal place. --- [3]

W-17/42/Q1

Q 26 (a) The angles of a triangle are in the ratio 2:3:5

(i) Show that the triangle is right-angled. -- [1]

(ii) The length of the hypotenuse of the triangle is 12 cm. Use trigonometry to calculate the length of the shortest side of this triangle. -- [3]

(b) The sides of a different right-angled triangle are in the ratio 3:4:5.

(i) The length of the shortest side is 7.8 cm.

Calculate the length of the longest side. --- [2]

(ii) Calculate the smallest angle in this triangle. --- [3]

W-17/43/Q1

Q 27 (a) (i) Write 180 as a product of its prime factors. --- [2]

(ii) Find the lowest common multiple (LCM) of 180 and 54. --- [2]

(b) An integer, X , written as a product of its prime factors is $a^2 \times 7^{b+2}$

An integer Y , written as a product of its prime factors is $a^3 \times 7^2$

The highest common factor (HCF) of X and Y is 1225.

The lowest common multiple (LCM) of X and Y is 42875

Find the value of X and the value of Y . --- [4]

W-17/43/Q10

Q 28 (a) Last year a golf club charged \$1650 for a family membership.

This year the cost increased by 12%.

Calculate the cost of a family membership this year. --- [2]

(b) The golf club runs a competition. The total prize money is shared in the ratio. 1st prize : 2nd prize = 9:5

The first prize is \$500 more than the 2nd prize.

(i) Calculate the total prize money for the competition. --- [2]

(ii) What percentage of the total prize money is given as the 1st prize. --- [1]

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Q 28 (c) For the members of the golf club the ratio men; children = 11:2
The ratio women; children = 10:3.

(i) Find the ratio men: women --- [2]

(ii) The golf club has 24 members who are children.
Find the total number of members. --- [3]

(d) The club shop sold a box of golf balls for \$20.40.
The shop made a profit of 20% on the cost price.
Calculate the cost price of the golf balls. [S-15/42/Q1] --- [3]

Q 29 (a) (i) Eduardo invests \$640 at a rate of 2% per year compound interest. Show that, at the end of 6 years, Eduardo has \$721, correct to the nearest dollar. --- [2]

(ii) Manuela also invests \$640. At the end of 4 years, Manuela has \$721. Find the yearly compound interest rate. -- [4]

(b) Carlos buys a motor scooter for \$1200. Each year the value of the scooter decreases by 10% of its value at the beginning of that year. Find the value of the scooter after 3 years. [S-15/43/Q2] --- [2]

Q 30 (i) Priyanka sells her model car for \$19.80 at a profit of 20%. Calculate the original price of the model car. --- [3]

(ii) Dev sells his model car for \$x at a profit of y%. Find an expression, in terms of x and y, for the original price of this model car. Write your answer as a single fraction: -- [3]

[S-15/43/Q7(c)]

Q 31 (a) Luc is painting the doors in his house. He uses $\frac{3}{4}$ of a tin of paint for each door. Work out the least number of tins of paint Luc needs to paint 7 doors. -- [3]

(b) Jan buys tins of paint for \$17.16 each. He sells the paint at a profit of 25%. For how much does Jan sell each tin of paint. --- [2]

(c) The cost of \$17.16 for each tin of paint is 4% more than the cost in the previous year. Work out the cost of each tin in the previous year. -- [3]

(Continued →)

(Continued →)

myCOMPANION

- Q31 (d) In America a tin of paint costs \$17.16. In Italy the same tin of paint costs €13.32. The exchange rate is \$1 = €0.72. Calculate, in dollars, the difference in the cost of the tin of paint. --- [2]
- (e) Paint is sold in cylindrical tins of height 11 cm. Each tin holds 750 ml of paint. (i) Write 750 ml in cm^3 . --- [1]
- (ii) Calculate the radius of the tin. Give your answer correct to 1 decimal place. [3]
- (iii) A mathematical similar tin has a height of 22 cm. How many litres of paint does this tin hold? --- [2]
- (f) The mass of a tin of paint is 890 grams, correct to the nearest 10 grams. Work out the upper bound of the total mass of 10 tins of paint. --- [1]
- (g) The probability that a tin of paint is dented is 0.07. Out of 3000 tins of paint, how many would you expect to be dented. --- [2]
- (h) Tins of paint are filled at the rate of 2m^3 per minute. How many 750 ml tins of paint can be filled in 1 hour. --- [3]

W-15/41/Q1

- Q32 A film company uses 512 actors in a film. The actors are in the ratio men : women : children = 7 : 11 : 14
- (a) (i) Show that there are 224 children in the film. --- [2]
- (ii) Find the number of men in the film. --- [1]
- (b) Every working day, each child is given \$ to spend. Each child works for 45 days. Calculate the total amount that the film company gives to children to spend. Give your answer correct to nearest \$100. --- [2]
- (c) The children have lessons every day in groups of no more than 12. Calculate the smallest possible number of groups. --- [2]
- (d) The film costs four million and ninety three thousand dollars to make. [1]
- (i) Write this number in figures. --- [1]
- (ii) Write your answers to part (d)(i) in standard form. --- [1]
- (e) A DVD copy of the film costs \$ 2.75 to make. The selling price is \$ 8.20. Calculate the percentage profit. --- [3]

W-15/42/Q1

Q 33(a) Kolyan buys water for \$ 2.60, He also buys biscuits

(i) The ratio, cost of biscuits : cost of water = 3 : 2

Find the cost of biscuits.

---[2]

(ii) Kolyan has \$ 9 to spend. Work out the total amount Kolyan spends on water and biscuits as a fraction of the \$9.

Give your answer in its simplest terms.

---[2]

(iii) The \$9 is 62.5% less than the amount Kolyan had to spend last week.

Calculate the amount Kolyan had to spend last week.

---[3]

(b) Priya buys a bicycle for \$ 250. Each year the value of bicycle decreases by 8% of its value at the beginning of that year. Calculate the value of Priya's bicycle after 10 years. Give your answer correct to nearest dollar.

W-15/43/Q1

Q 34:

(a) The running costs for a papermill are \$ 75 246.

This amount is divided in the ratio labour costs : materials = 5 : 1

Calculate the labour costs.

---[2]

(b) In 2012 the company made a profit of \$ 135 890. In 2013 the profit was \$ 150 675. Calculate the percentage increase in profit from 2012 to 2013:-- [3]

(c) The profit of \$ 135 890 in 2012 was an increase of 7% on the profit in 2011. Calculate the profit in 2011.

S-14/41/Q3

---[3]

Q 35 Jane and Kate share \$ 240 in the ratio 5 : 7.

(a) Show that Kate receives \$ 140

---[2]

(b) Jane and Kate each spend \$ 20.

Find the new ratio Jane's remaining money : Kate's remaining money.

Give your answer in its simplest form.

---[2]

(c) Kate invests \$ 120 for 5 years at 4% per year simple interest.

Calculate the total amount Kate has after 5 years.

---[3]

(d) Jane invests \$ 80 for 3 years at 4% per year compound interest. Calculate the total amount Jane has after 3 years. Give your answer correct to nearest cent. [3]

(e) An investment of \$ 200 for 2 years at 4% per year compound interest is the same as an investment of \$ 200 for 2 years at $r\%$ per year simple interest.

Find the value of r .

S-14/42/Q1

---[3]

Q36 In July, a supermarket sold 45 981 bottles of fruit juice.

(a) The cost of a bottle of fruit juice was \$1.35.

Calculate the amount received from the sale of the 45 981 bottles.

Give your answer correct to the nearest hundred dollars. --- [2]

(b) The number of bottles sold in July was 17% more than the number sold in January. Calculate the number of bottles sold in January. --- [3]

(c) There are three different flavours of fruit juice. The number of bottles sold in each flavour was in the ratio apple:orange:cherry

The total number of bottles sold was 45 981. $= 3:4:2$.

Calculate the number of bottles of orange juice sold. --- [2]

(d) One bottle contains 1.5 litres of fruit juice. Calculate the number of 330 ml glasses that can be filled completely from one bottle. --- [3]

(e) $\frac{5}{9}$ of the 45 981 bottles are recycled.

Calculate the number of bottles that are recycled. --- [2]

[5-14/43/Q1]

Q37 (a) A company makes compost by mixing loam, sand and coir in the ratio; loam: sand: coir = 7:2:3

(i) How much loam is there in a 72 litre bag of the compost? --- [2]

(ii) In a small bag of compost there are 13.5 litres of coir.

How much compost is in small bag? --- [2]

(iii) The price of a large bag of compost is \$8.40. This is an increase of 12% on the price last year. Calculate the price last year. [11-14/41/Q1] --- [3]

Q38 (a) Alfonso has \$75 to spend on the internet,

He spends some money on music, films and books.

(i) The money he spends on music, films and books is in the ratio, music: films: books = 5:3:7

He spends \$16.50 on music.

Calculate the total amount he spends on music, films and books. --- [3]

(ii) Find this total amount as a percentage of \$75 --- [1]

(Continued →)

(Continued →)

Q38(b) The download times for the music, films and books are in ratio,
music : film : books = 2 : 9 : 1

The total download time is 3 hours and 33 minutes. Calculate the --- [3]
download time for films. Give your answer in hours, minutes and seconds.

(c) The cost \$16.50 for the music was a reduction of 12% on the original cost. Calculate the original cost of music. W-14/42/Q1 --- [3]

Q39 There are three different areas, A, B, C, for seating in a theatre.
The number of seats in each area are in the ratio $A:B:C = 11:8:7$
There are 920 seats in area B.

(a)(i) Show that there are 805 seats in area C. --- [1]

(ii) Write the number of seats in area B as a percentage of the total number of seats. --- [2]

(b) The cost of a ticket for a seat in each area of the theatre is shown in the table.

Area A	\$11.50
Area B	\$15
Area C	\$22.50

For a concert 80% of area B tickets were sold and $\frac{3}{5}$ of area C tickets were sold. The total amount of money taken from ticket sales was \$35834.

Calculate the number of area A tickets that were sold. --- [5]

(c) The total tickets sale of \$35834 was 5% less than the ticket sales at the previous concert. Calculate the ticket sales at the previous concert. --- [3]

Q40 (a) One day, Maria took 27 minutes to walk W-14/43/Q2
1.8 km to school. She left home at 0748.

(i) Write down the time Maria arrived at school. --- [1]

(ii) Show that Maria's average walking speed was 4 km/h. --- [2]

(b) Another day, Maria cycled the 1.8 km to school at an average speed of 15 km/h.

(i) Calculate the percentage increase that 15 km/h is on Maria's walking speed of 4 km/h. --- [3]

(ii) Calculate the percentage decrease that Maria's cycling time is on her walking time of 27 minutes. --- [3]

(Continued →)

(→ Continued)

- Q 40 (b) (iii) After school, Maria cycled to her friend's home. This took 9 minutes, which was 36% of the time Maria took to walk to her friend's home. Calculate the time Maria takes to walk to her friend's home. --- [2]

S-13/41/21

Q 41. A tennis club has 560 members.

- (a) The ratio men: women: children = 5:6:3
- Show that the club has 240 women members. --- [2]
 - How many members are children. --- [1]
- (b) $\frac{5}{8}$ of the 240 women members play in the tournament. How many women members do not play in the tournament. --- [2]
- (c) The annual membership fee in 2013 is \$198 for each adult and \$75 for each child.
- Calculate the total amount the 560 members pay in 2013. --- [2]
 - The adult fee of \$198 in 2013 is 5.6% more than the fee in 2012. Calculate the adult fee in 2012. --- [3]
- (d) The club buys 36 tennis balls for \$9.50 and sells them to members for \$0.75 each. Calculate the percentage profit the club makes. --- [3]
- (e) A tennis court is a rectangle with a length 23.7 m and width 10.9 m, each correct to 1 decimal place. Calculate the upper and lower bounds of the perimeter of the court. --- [3]

S-13/42/21

- Q 42 (a) Ali and Ben receive a sum of money. They share it in the ratio 5:1. Ali receives \$2345. Calculate the total amount. --- [2]
- (b) Ali uses 11% of his \$2345 to buy a television. Calculate the cost of the television. --- [2]
- (c) A different television costs \$330.
- Ben buys one in a sale when this cost is reduced by 15%. How much does Ben pay? --- [2]
 - \$330 is 12% less than the cost last year. Calculate the cost last year. --- [3]

(Continued →)

(Continued →)

- Q42 (d) Ali invests \$1500 of his share in a bank account. The account pays compound interest at a rate of 2.3% per year. Calculate the total amount in the account at the end of 3 years. --- [3]
- (e) Ali also buys a computer for \$325. He later sells this computer for \$250. Calculate Ali's percentage loss. --- [3]

S-13/43/Q1

Q43 David sells fruit at the market.

- (a) In one week, David sells 120 kg of tomatoes and 80 kg of grapes.
- (i) Write 80 kg as a fraction of the total mass of tomatoes and grapes. Give your answer in its lowest terms. --- [1]
- (ii) Write down the ratio mass of tomatoes : mass of grapes. Give your answer in its simplest form. --- [1]
- (b) (i) One day he sells 28 kg of oranges at \$1.56 per kilogram. He also sells 35 kg of apples. The total he receives from selling the oranges and the apples is \$86.38. Calculate the price of 1 kg of apples. --- [2]
- (ii) The price of 1 kg of oranges is \$1.56. This is 20% more than the price two weeks ago. Calculate the price two weeks ago. --- [3]
- (c) On another day, David received a total of \$667 from all the fruit he sold. The cost of the fruit was \$314.20. David worked for $10\frac{1}{2}$ hours on this day. Calculate David's rate of profit in dollars per hour. [2]

W-13/41/Q1

Q44 Last year Mukhtar earned \$18900. He did not pay tax on \$5500 of his earnings. He paid 24% tax on his remaining earnings.

- (a) (i) Calculate how much tax Mukhtar paid last year. --- [2]
- (ii) Calculate how much Mukhtar earned each month after tax had been paid. --- [2]
- (b) This year Mukhtar now earns \$19750.50. Calculate the percentage increase from \$18900. --- [2]
- (c) Mukhtar has \$1500 to invest in one of the following ways.
- Account A paying simple interest at a rate of 4.1% per year.
 - Account B paying compound interest at a rate of 3.3% per year.
- Which account will be worth more after 3 years and by how much? --- [5]

W-13/42/Q1

Q45

Noma flies from Johannesburg to Hong Kong. Her plane leaves Johannesburg at 1845 and arrives in Hong Kong 13 hours and 25 minutes later. The local time in Hong Kong is 6 hours ahead of the time in Johannesburg.

(a) At what time does Noma arrives in Hong Kong? --- [2]

(b) Noma sleeps for part of journey. The time she spends is given by the ratio sleeping : awake = 3 : 4

Calculate how long Noma sleeps during the journey. Give your answer in hours and minutes. --- [2]

(c) (i) The distance from Hong Kong to Johannesburg is 10712 km. The time taken for the journey is 13 hours and 25 minutes.

Calculate the average speed of the plane for this journey. --- [2]

(ii) The plane uses fuel at the rate of 1 litre for every 59 metres travelled. Calculate the number of litres of fuel used for journey from Johannesburg to Hong Kong. Give your answer in standard form. [4]

(d) The cost of Noma's journey is 10148 South African Rand (R). This is an increase of 18% on the cost of the journey one year ago.

Calculate the cost of the same journey one year ago. --- [3]

W-13/42/Q7

Q46 (a)(i) In a camera magazine, 63 pages are used for adverts. The ratio, number of pages of adverts : number of pages of reviews = 7 : 5
Calculate the number of pages for reviews. --- [2]

(ii) In another copy of magazine, 56 pages are used for reviews and for photographs. The ratio,

number of pages of reviews : number pages of photographs = 9 : 5

Calculate the number of pages for photographs. --- [2]

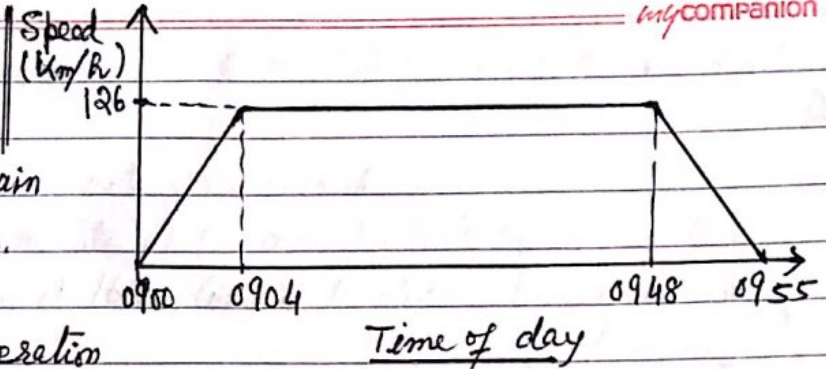
(iii) One copy of magazine costs \$4.90. An annual subscription costs \$48.80 for 13 copies.

Calculate the percentage discount by having an annual subscription. --- [3]

(b) In a car magazine, 25% of pages are used for selling second hand cars, $62\frac{1}{2}\%$ of the remaining pages are used for features, and the other 36 pages are used for reviews. Work out the total number of pages in the magazine.

W-13/43/Q1

Q. 47 The graph shows information about the journey of a train between two stations.



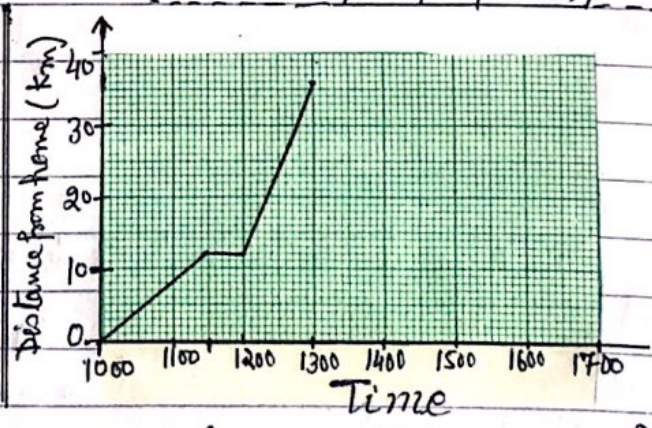
- (a)(i) Work out the acceleration of the train during the first 4 minutes of this journey. Give your answer in km/h^2 --- [2]
- (ii) Calculate the distance, in kilometres, between two stations. --- [4]
- (b)(i) Show that 126 km/h is the same speed as 35 m/s . --- [1]
- (ii) The train has a total length of 220 m . At 0930 , the train crossed a bridge of length 1400 m . Calculate the time, in seconds, that the train took to completely cross the bridge. --- [3]
- (c) On a different journey, the train took 73 minutes, correct to the nearest minutes, to travel 215 km , correct to the nearest 5 km . Calculate the upper bound of the average speed of the train for this journey. Give your answer in km/h . --- [4]

W-17/43/Q3

- Q. 48 (i) Irina walks 10 km at 4 km/h and then a further 8 km at 5 km/h . Calculate Irina's average speed for the whole journey. --- [3]
- (ii) Dariella walks $x \text{ km}$ at 5 km/h and then runs $(x+4) \text{ km}$ at 10 km/h . The average speed of the journey is 7 km/h . Find the value of x . Show all your working. --- [5]

S-15/43/Q7(b)

Q. 49 Ali leaves home at 1000 to cycle to his grandmother's house. He arrives at 1300 . The distance-time graph represents his journey.



- (a) Calculate Ali's speed between 1000 and 1130 . Give your answer in km/h . (Continued →) --- [2]

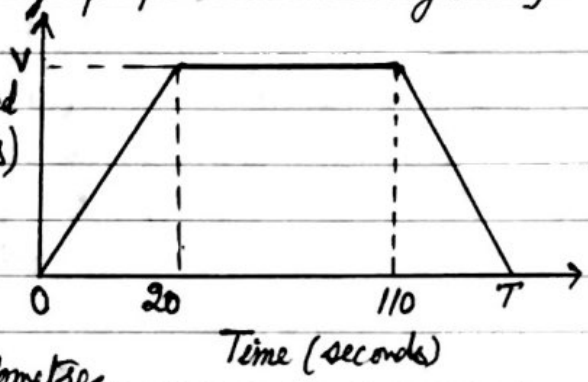
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- Q 49 (b) Show that Ali's average speed for the whole journey to his grandmother's house is 12 km/h. --- [2]
- (c) Change 12 km/h into metres per minute. --- [2]
- (d) Ali stays for 45 minutes at his grandmother's house and then returns home. He arrives home at 1642. Complete the distance-time graph. --- [2]

[S-14/41/Q2]

Q 50(c) The diagram shows the speed-time graph for a car travelling along a road for T seconds.

To begin with the car accelerated at 0.75 m/s^2 for 20 seconds to reach a speed of $v \text{ m/s}$.



- (i) Show that the speed, v , of the car is 15 m/s. --- [1]

- (ii) the total distance travelled is 1.8 kilometres.

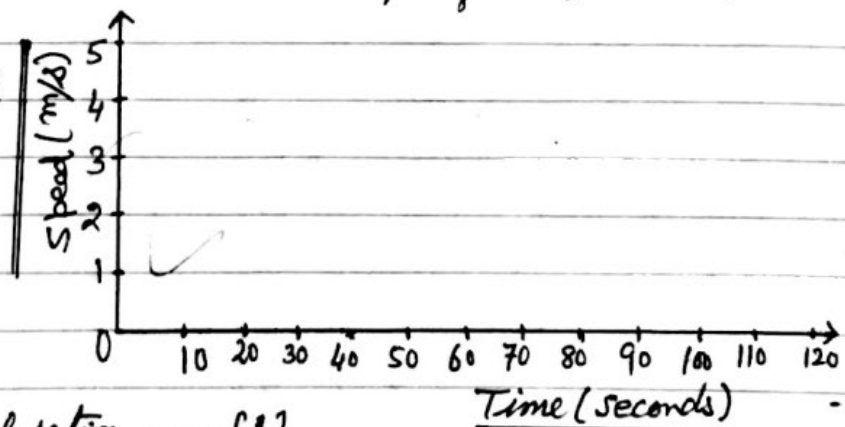
Calculate the total time T , of the journey. --- [4]

- (d) Asma runs 22 km, correct to the nearest km. She takes $2\frac{1}{2}$ hours, correct to the nearest half hour. Calculate the upper bound of Asma's speed. --- [3]

[W-14/41/Q2(c)(d)]

Q 51 Emily cycles along a path for 2 minutes. She starts from rest and accelerates at a constant rate until she reaches a speed of 5 m/s after 40 seconds. She continues cycling at 5 m/s for 60 seconds. She then decelerates at a constant rate until she stops after a further 20 seconds.

- (a) On the grid, draw a speed-time graph to show Emily's journey.

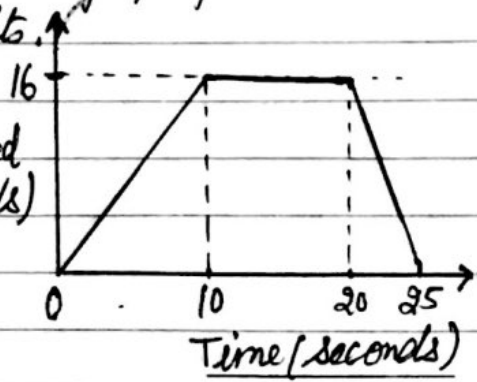


- (b) Find Emily's acceleration. --- [1]

- (c) Calculate Emily's average speed for the journey. --- [4]

[W-13/41/Q2]

Q 52 The diagram shows the speed-time graph for a car travelling between two sets of traffic lights.

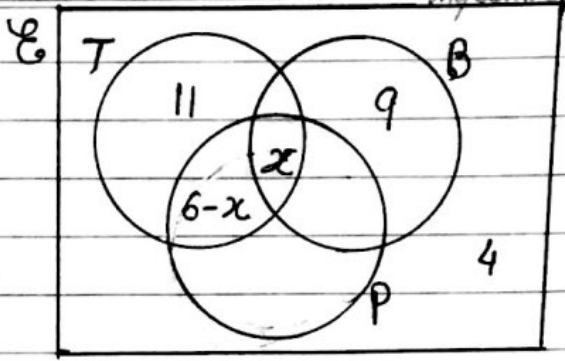


(i) Calculate the deceleration of the car for last 5 seconds of the journey. --- [1]

(ii) Calculate the average speed of the car between the two sets of traffic lights. --- [4]

[W-13/43/Q 2(C)]

Q. 53 In the Venn diagram,
 $E = \{\text{children in a nursery}\}$
 $B = \{\text{children who received a book for their birthday}\}$
 $T = \{\text{children who received a toy for their birthday}\}$



$P = \{\text{children who received a puzzle for their birthday}\}$
 x children received a book, a toy and a puzzle.
 6 children received a toy and a puzzle.

(a) 4 children received a book and a toy. 5 children received a book and a puzzle. 7 children received a puzzle but not a book and not a toy. Complete the Venn diagram above. ---[3]

(b) There are 40 children in the nursery. Using the Venn diagram, write down and solve an equation in x . ---[3]

(c) Work out,

(i) The probability that a child, chosen at random, received a book but not a toy and not a puzzle. ---[1]

(ii) the number of children who received a book and a puzzle but not a toy. ---[1]

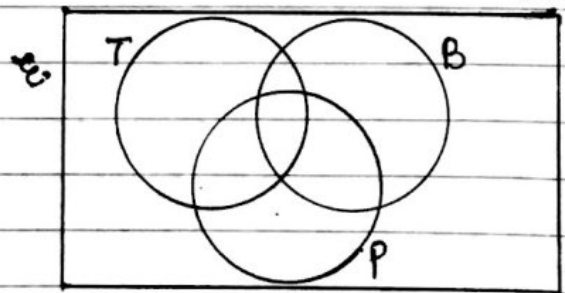
(iii) $n(B)$ ---[1]

(iv) $n(B \cup P)$ ---[1]

(v) $n(B \cup T \cup P)$ ---[1]

(d) Shade the region,

$B \cap (T \cup P)'$



[S-14/41/24]

---[1]

Answers

Q1 (a) (i) 4950 (ii) 9:11

(b) 1504, 564, 188

(c) (i) 6848 (ii) 54.3

Q2 (a) (i) 2500 (ii) Increase of 2%

(b) 2036 (accept 2035) (per year)

Q3 (a) 22.9 (or 22.85)

(b) $5635 \times \frac{17}{35} = 2737$

(c) 5000

(d) 9950

(e) 1.98

Q4 (a) (i) 275.31 (ii) 3202

(b) 17 (17.00 to 17.01)

(c) (i) 40 (ii) 11.9 (11.86 to 11.87)

(d) 150 (million)

(e) 250

Q5 (a) (i) $600 \times \frac{11}{20} = 330$; (ii) 270

(b) (i) 372 (ii) 12.6 or 12.7

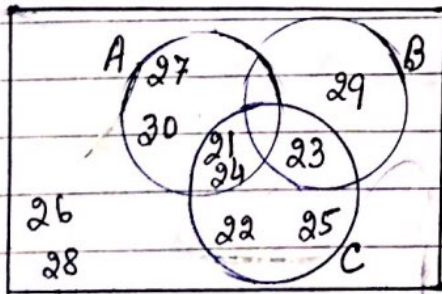
(c) (i) $\frac{99}{280}$ (ii) 27.5

(d) (i) 32 (ii) 13

Q6 (a) (i) 100 (ii) 92.3 or 11.29 --- 92.31

(b) (i) 240 (ii) $\frac{2}{9}$

Q7 (a)



(b) (i) \neq (ii) ϕ

(c) 21, 23, 24, 29

(d) (i) 5 (ii) 9

(e) \subset or \subseteq

Q7 (a) (i) 9550 (ii) 23 158 750

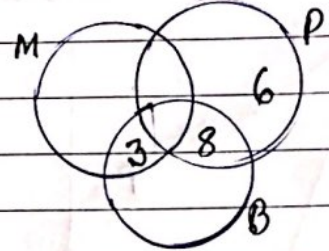
(iii) 23160000 (iv) 2.316×10^7

(b) 520 (c) 3380 (3376 to 3377)

Q8 (a) $\frac{8}{32} \times 640 = 160$ (b) 300 and 180

(c) 10 (d) $\frac{7}{24}$

Q9 (a) (i)



(ii) 46

(iii) 11

(iv) $\frac{7}{19}$

(b) (i) $\frac{9}{200}$ or 0.045

(ii) 10800

(iii) 7.2

Q10 (a) 6250 (b) 4441

(c) 1.58 or 1.581--

Q11 (a) (i) 48 (ii) 32.4

(iii) $\frac{13}{40}$ (iv) 24

(b) 660 (c) 663.9 (d) 1.5

Q12 (a) (i) 1245 [Pm] (ii) 788

(b) (i) 4230 (ii) 22.2

(c) (i) 3808 (ii) 800

(d) (i) 1130 (ii) \$146.9

Q13 (a) (i) 36600 (ii) $16\frac{2}{3}$ or 16.7

(b) 1231708 (c) 27.2

Q14 (i) 2.5 (ii) 1312.5

Q15 (a) (i) 60 and 45

(ii) 117.6

(iii) 125

(b) 30.68

(c) 480

(d) 6.5

Q16 (a) (i) 11054.25 (ii) 16500

(b) 260

(c) (i) 6.18

(ii) 6

Q17 (a) (i) 1050 (ii) 12 (iii) $5\frac{1}{4}$ hr or 5.25 hrs

(b) 24.6

(c) 63

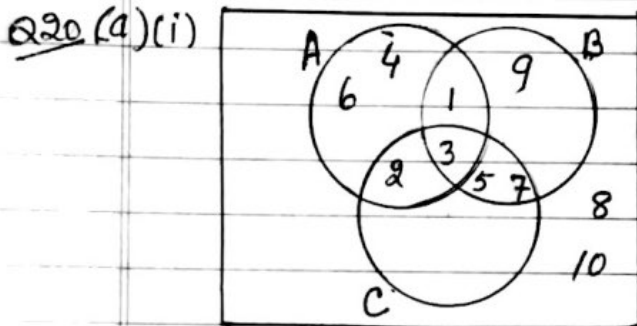
(d) (i) 0.661

(ii) 48.

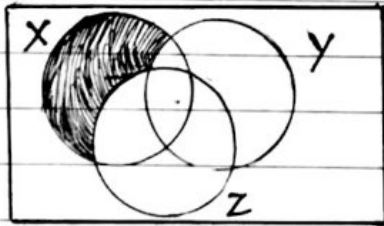
Answers

- Q18 (a) A: 14 $3n-1$
 B: -4 $26-6n$
 C: 25 n^2
 D: 20 n^2-n
- (b) (i) $\frac{n(3n+1)}{2} = 155 \Rightarrow 3n^2+n-310=0$
 (ii) 10, $-3\frac{1}{3}$
 (iii) 10

- Q19 (a) $\frac{1.5}{100} \times 450000 = 6750$
 (b) 6000 (c) 376.25
 (d) 22.4 (e) 5184 (f) 9023



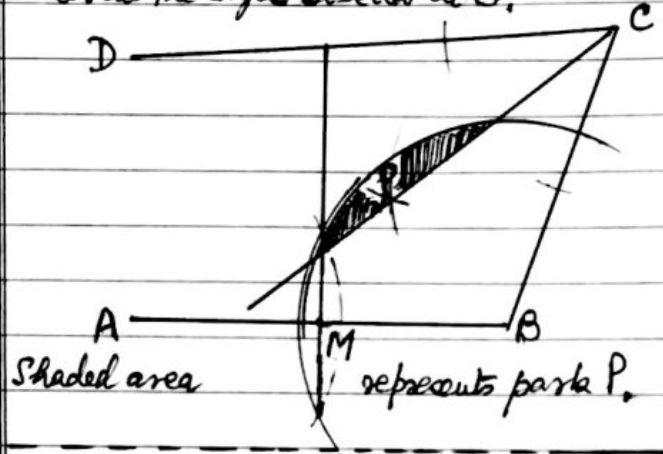
- (ii) E, {3}, ϕ or {}
 (iii) 5
 (b) (i) C
 (ii)



- Q21 (a) (i) $\frac{13}{24} \times 12000 = 6500$
 (ii) 4000
 (b) $2 \times 6500 + 5 \times 4000 + (12000 - 6500 - 4000) = 34500$
 (c) 37500
 (d) $1\frac{1}{26}$ (e) 89500

- Q22 (a) 5 (b) CNM (c) 3
 (d) (i) $\frac{8}{30}$ (ii) $\frac{14}{30}$
 (e) $30/272$ ——— $[\frac{6}{17} \times \frac{5}{16}]$

- Q23 (a) 475 or 465 to 485
 (b) Construct perpendicular bisector with two pairs of intersecting arcs.
 (c) draw an arc with centre B and radius 5.8cm.
 draw the angle bisector at C.



- Q24 (a) 2915 (b) 1056
 (c) (i) 52.2 or 52.17 (ii) 63 (63.03 to 63.05)
 (d) 0.06 (e) 9750

- Q25 (a) (i) 4:5 (ii) 4:5 (iii) 3:4
 (b) (i) 26.8 or 26.79 (ii) 16000
 (c) 1.6 or $\frac{8}{5}$ (d) 2.5 or $\frac{5}{2}$
 Q26 (i) $36^\circ, 54^\circ, 90^\circ$ hence right triangle.

- (a) (i) 7.05 or 7.053
 (b) (i) 13 (ii) 36.9 or 36.86 to 36.87

- Q27 (a) (i) $2^2 \times 3^2 \times 5$ (ii) 540
 (b) $X = 8575$; $Y = 6125$

- Q28 (a) 1848
 (b) (i) 1750 (ii) $64\frac{2}{7}$ or 64.3
 (c) (i) 33:20 (ii) 236

- Q29 (a) (i) $640 \times 1.02^6 = 720.7$
 (ii) 3.02 or 3.020 to 3.024
 (b) 874.8

- Q30 (i) 16.5
 (ii) $\frac{100x}{100+y}$

Answers

- Q31 (a) 6 (b) 21.45 (c) 16.5
(d) 1.34 (e) (i) 750 (ii) 4.7 (iii) 6
(f) 8950 (g) 210 (h) 180000
- Q32 (a) (i) $\frac{14}{32} \times 512 = 224 \checkmark$
(ii) 112
(b) 10/100 (c) 19
(d) (i) 4093000 (ii) 4.093×10^6
(e) 198 or 198.1 to 198.2
- Q33 (a) (i) 3.9 (ii) 13/18 (iii) 24
(b) 109
- Q34 (a) 62705 (b) 10.9 or 10.88
(c) 127000
- Q35 (a) $\frac{240}{12} \times 7 = 140 \checkmark$
(b) 2:3
(c) 144 (d) 89.99 (e) 4.08
- Q36 (a) 62100 (b) 39300 (c) 20436
(d) 4 (e) 25545
- Q37 (a) (i) 42 (ii) 54 (iii) 7.5
- Q38 (a) (i) 49.5 (ii) 66
(b) 2 hr 39 mins 45 secs (c) 18.75
- Q39 (a) (i) $\frac{920}{8} \times 7 = 805 \checkmark$
(ii) 30.8 or 30.76 to 30.77
(b) 1211 (c) 37720
- Q40 (a) (i) 08/15 (ii) $\frac{1.8 \times 60}{27} = 4$
(b) (i) 275 (ii) 73.3 (iii) 25
- Q41 (a) (i) $\frac{6}{14} \times 560 = 240$ (ii) 120
(b) 90 (c) (i) 96/20 (ii) 187.5
(d) 184 [2--] (e) 69.4 and 69.0
- Q42 (a) 2814 (b) 257.95
(c) (i) 280.5 (ii) 375
(d) 1605.89 or (1605.9) (ii) 23.1 / (23.07 to 23.08)

- Q43 (a) (i) 2/5 (ii) 3:2
(b) (i) 1.22 (ii) 1.3 (c) 33.6
- Q44 (a) (i) 3216 (ii) 1307
(b) 4.5% (c) A by 31.05 or 31.04 to 31.05
- Q45 (a) 14 10 or 2 10 pm
(b) 5 hrs and 45 mins
(c) (i) 798 or 798.2 to 798.4
(ii) 1.82×10^5 or 1.815×10^5 to 1.816×10^5
(d) 8600
- Q46 (a) (i) 45 (ii) 20 (iii) 23.4 or 23.38 to 23.41
(b) 128
- Q47 (a) (i) 1890 (ii) 103.95
(b) (i) $\frac{126 \times 1000}{60 \times 60} = 35$
(ii) 46.3 or 46.28 to 46.29
(c) 180
- Q48 (i) 4.39 (ii) $\frac{x+(x+4)}{\frac{x}{5} + \frac{(x+4)}{10}} = 7 \Rightarrow 12 \checkmark$
- Q49 (a) 8 (b) $\frac{36}{3} = 12 \checkmark$
(c) 200 (d) Horizontal line at 36 to 1345 joined to (1620, 0)
- Q50 (c) (i) 15 (ii) 150
(d) 10
- Q51 (a) 3 correct lines on grid.
(0,0) to (40,5); (40,5) to (100,5)
and (100,5) to (120,0).
(b) 5/40 (c) 3.75
- Q52 (i) 16/5 (or 3.2)
(ii) 11.2
- Q53 (a) 4-x, 5-x and 7 placed correctly.
(b) x=3
(c) (i) 9/40 (ii) 2 (iii) 15 (iv) 25 (v) 4
(d)

