

Numbers – 2024 O Level Math D 4024**1. June/2024/Paper_4024/11/No.2**

At the start of the day the mass of a bird is 4.628 kg.
Later in the day the mass of this bird is 4.693 kg.

Calculate the increase in the mass of the bird.
Give your answer in grams.

..... g [2]

2. June/2024/Paper_4024/11/No.3

Work out.

(a) 0.3×0.02

..... [1]

(b) 15% of 40

..... [1]

(c) $7 - (-25)$

..... [1]

3. June/2024/Paper_4024/11/No.8

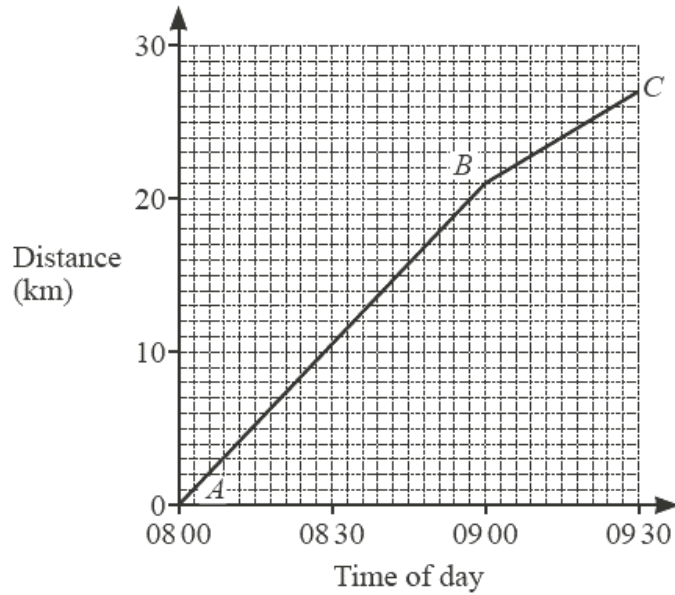
Ahmed invests \$4000 at a rate of 1.5% per year simple interest.

Calculate the value of the investment after 2 years.

\$ [2]

4. June/2024/Paper_4024/11/No.9

(a)



The diagram shows the distance–time graph of a cyclist for the first two stages of a race, *AB* and *BC*.

Work out the average speed of the cyclist for the second stage, *BC*.

..... km/h [2]

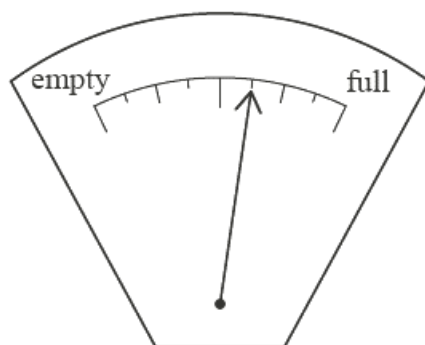
(b) A bus travels at an average speed of 20 km/h.

Work out the time the bus takes to travel 50 km.

..... hours [1]

5. June/2024/Paper_4024/11/No.10

(a)



The diagram shows the fuel gauge of a car.
This car has 40 litres of fuel in the tank.

Calculate the amount of fuel that the tank contains when it is full.

..... litres [2]

(b) The car uses 5.4 litres of fuel for every 100 km travelled.

Calculate the amount of fuel that the car will use on a journey of 300 km.

..... litres [1]

6. June/2024/Paper_4024/11/No.15

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

$$\frac{2.87 \times \sqrt{396.5}}{1.92^2}$$

..... [2]

7. June/2024/Paper_4024/11/No.18

In this table, p is directly proportional to q^2 .

p	12	a	48
q	2	7	b

Calculate the value of a and the value of b .

$$a = \dots\dots\dots$$

$$b = \dots\dots\dots [3]$$

8. June/2024/Paper_4024/12/No.1

(a) Here are five temperatures in °C.

4 1 -6 0 -2

Write these temperatures in order, starting with the lowest.

.....,,,, [1]
lowest

(b) Write these numbers in order of size, starting with the smallest.

0.45 $\frac{3}{8}$ 40%

.....,, [1]
smallest

9. June/2024/Paper_4024/12/No.5

(a) Convert 4 kilograms to grams.

..... g [1]

(b) Convert 250cm³ to litres.

..... litres [1]

10. June/2024/Paper_4024/12/No.6

(a) Jack uses number cards to make a 2-digit number.

Complete the missing card to give a 2-digit number that is **not** a prime number.



[1]

(b) Mei says:

When I add two multiples of 3, the answer is always a multiple of 6.

Give an example to show that Mei is wrong.

..... [1]

11. June/2024/Paper_4024/12/No.7

(a) Work out $\frac{2}{7} \div \frac{1}{3}$.

..... [1]

(b) Work out $\frac{5}{6} + \frac{3}{4}$.

Give your answer as a mixed number.

..... [2]

12. June/2024/Paper_4024/12/No.8

- (a) A train leaves station *A* at 07 43.
The train arrives at station *B* at 10 27.

Work out the time the train takes to travel from station *A* to station *B*.

..... hours minutes [1]

- (b) A bus leaves the bus station at 06 25.
It arrives at the airport at 07 05.
The distance from the bus station to the airport is 24 km.

Calculate the average speed of the bus for this journey.
Give your answer in km/h.

..... km/h [3]

13. June/2024/Paper_4024/12/No.11

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

$$\frac{5.32 + 3.97}{\sqrt{878}}$$

..... [2]

14. June/2024/Paper_4024/12/No.14

(a) Write 42 000 000 in standard form.

..... [1]

(b) Evaluate $(1.3 \times 10^{-4}) + (7.4 \times 10^{-3})$.

Give your answer in standard form.

..... [2]

15. June/2024/Paper_4024/12/No.19

(a) The mass of a bag of almonds is 125 g, correct to the nearest gram.

Write down the lower bound of the mass of the bag of almonds.

..... g [1]

(b) The mass of a large box is 500 g, correct to the nearest 10 grams.
The mass of a small box is 250 g, correct to the nearest 10 grams.

Calculate the upper bound of the difference between the mass of a large box and the mass of a small box.

..... g [2]

16. June/2024/Paper_4024/21/No.1

(a) The cost of a ticket to watch a basketball match is \$67.60 .

(i) The total money received from ticket sales for one match is \$1 183 000.

Find the number of tickets sold for this match.

..... [1]

(ii) The cost of one ticket at \$67.60 is 4% more than the cost of one ticket last year.

Calculate the cost of one ticket last year.

\$ [2]

(b) The number of seats in the basketball stadium is 20 545.

The number of seats sold for the first match of the season is 19 340.

Calculate the percentage of the seats in the stadium that are sold.

..... % [1]

(c) A team plays 41 matches.

For the 41 matches, the mean number of seats sold per match is 16 440.

The total number of seats sold for the first 21 matches is 329 000.

Calculate the mean number of seats sold per match for the last 20 matches.

..... [3]

- (d) The table shows the salaries of three basketball players.

Basketball player	Salary (\$)
Stephen	8.27×10^6
Joe	4.29×10^6
Tristan	3.64×10^7

- (i) Find the difference between the salaries of Tristan and Stephen.

\$ [1]

- (ii) The total Joe earns is his salary plus a bonus of \$ x .
The total he earns is 102.5% of his salary.

Calculate the value of x .

$x =$ [2]

17. June/2024/Paper_4024/21/No.4

- (a) Two of the factors of 50 are square numbers.
One of these square numbers is 1.

Find the other square number that is a factor of 50.

..... [1]

- (b) $A = 2^{x-1} \times 3^{2y} \times 7$
 $B = 2^{x+3} \times 3^y \times 5$

The numbers A and B are written as the product of their prime factors, where x and y are positive integers.

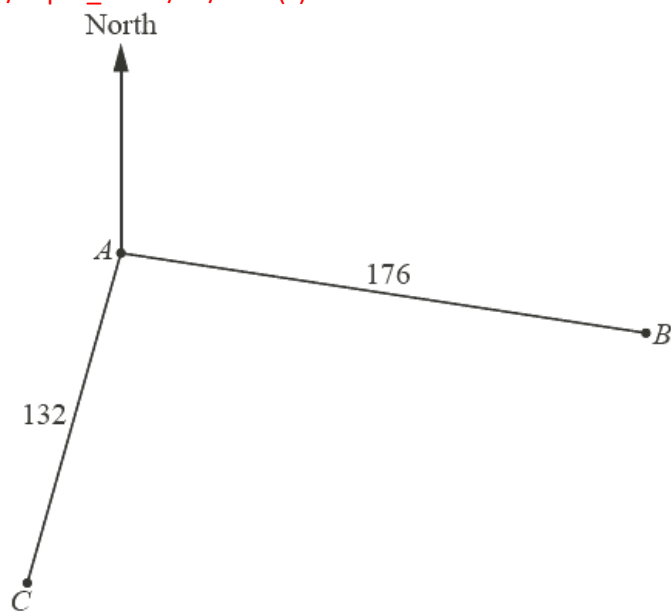
- (i) Find the highest common factor (HCF) of A and B in terms of x and y .

..... [2]

- (ii) Find the lowest common multiple (LCM) of A and B in terms of x and y .

..... [2]

18. June/2024/Paper_4024/21/No.9(c)



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SCALE

The diagram shows the positions of three ports A , B and C .
The bearing of port B from port A is 107° .
The bearing of port C from port A is 192° .
 $AB = 176$ km and $AC = 132$ km.

- (c) Boat B leaves port B at 10.00 am.
It sails directly to port A at an average speed of 48 km/h.

Boat C leaves port C at 10.15 am.
It sails directly to port A and arrives there 7 minutes before boat B .

Find the average speed of boat C in km/h.

..... km/h [5]

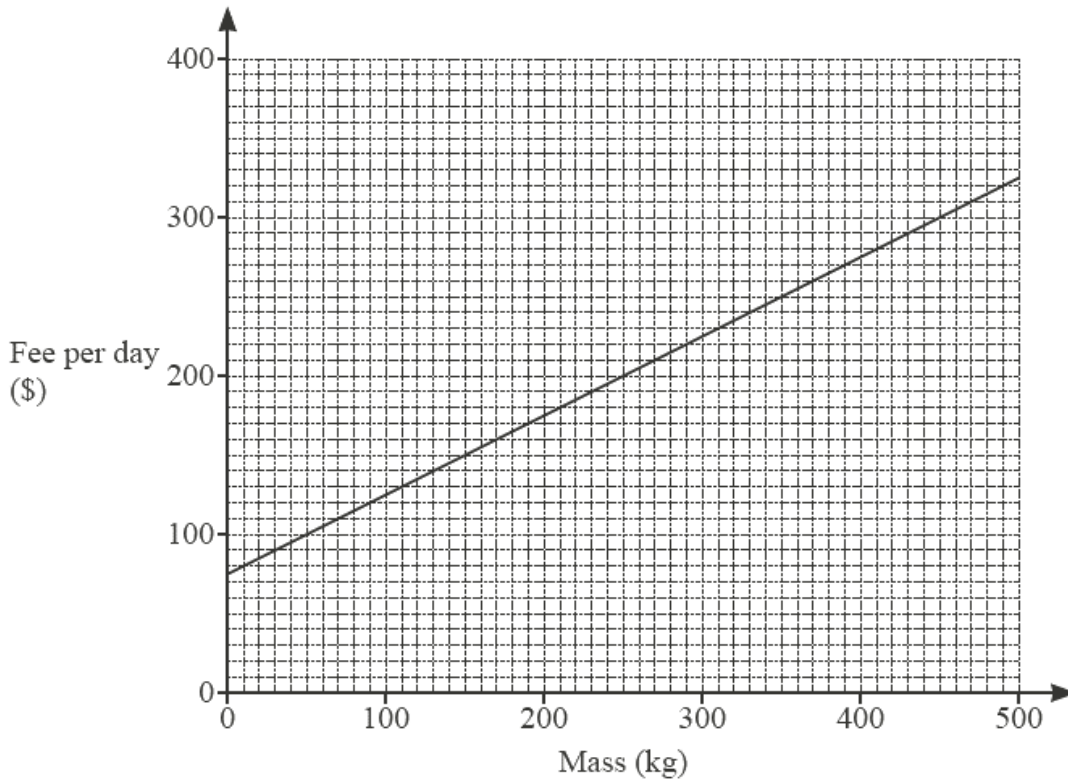
19. June/2024/Paper_4024/22/No.1

- (a) Oranges cost \$1.45 per kilogram.
Asher buys 1.2 kg of oranges.

Find the change he receives from \$10.

\$ [1]

- (b) Maria pays a fee to sell strawberries at a market.
Each day she pays \$75 plus a payment for the mass of strawberries she sells.
The fee Maria pays per day is shown on the graph.



- (i) One day Maria's fee is \$240.

Use the graph to find the mass of strawberries she sells that day.

..... kg [1]

- (ii) On Saturday Maria sells 270 kg of strawberries.
On Sunday she sells 220 kg of strawberries.

Find the **total** fee she pays for these two days.

\$ [2]

- (iii) The fee per day for Maria now increases.
Each day she now pays \$90 plus a payment of \$60 for every 100 kg of strawberries she sells.

On the grid, draw a line to represent this new fee when she sells 0 kg to 500 kg of strawberries in a day.

[2]

- (c) Write the ratio 1.6 kg : 600 g : 2.4 kg in its simplest form.

..... : : [2]

20. June/2024/Paper_4024/22/No.3

- (a) The exchange rate between dollars (\$) and Malaysian Ringgits (MYR) is $\$1 = 4.19 \text{ MYR}$.
The exchange rate between dollars (\$) and Pakistani Rupees (PKR) is $\$1 = 179.12 \text{ PKR}$.

Find the exchange rate between Malaysian Ringgits and Pakistani Rupees.

$$1 \text{ MYR} = \dots\dots\dots \text{PKR} \quad [2]$$

- (b) Farhad invests \$1500 in an account paying compound interest at a rate of 4% per year.
Gulsan invests \$1500 in an account paying simple interest at a rate of $x\%$ per year.

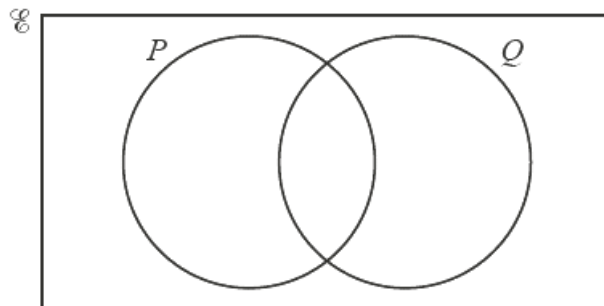
Farhad and Gulsan have the same amount of money in their accounts at the end of 2 years.

Calculate the value of x .

$$x = \dots\dots\dots [4]$$

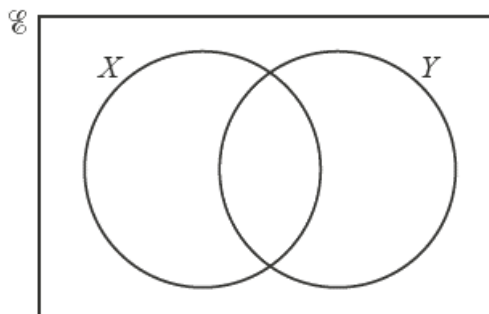
21. June/2024/Paper_4024/22/No.6

(a) In the Venn diagram, shade the region represented by $P \cup Q$.



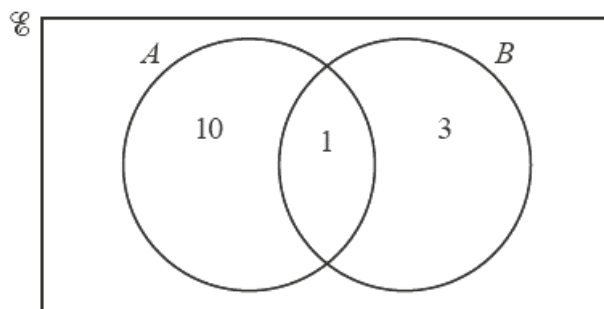
[1]

(b) Use set notation to describe the shaded region in the Venn diagram.



..... [1]

- (c) $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
 $A = \{x : x \text{ is a factor of } 40\}$
 $B = \{x : x \text{ is an odd number}\}$



(i) Complete the Venn diagram. [2]

(ii) List the elements of $A' \cap B$.

..... [1]

(iii) One element of \mathcal{E} is chosen at random.

Find the probability that this element is in $A \cap B$.

..... [1]