1. Question | 4024 May-June 2025 P2 V2 Q2

2 **(a)** Write eighteen thousand and twelve in figures.

..... [1]

(b) Write down a prime number between 20 and 30.

..... [1]

(c) Find the reciprocal of $\frac{1}{9}$.

..... [1]

2. Question | 4024 May-June 2025 P2 V2 Q3

3 **(a)** Write the ratio 175 ml : 2.5 litres in its simplest form.

..... : ..... [2]

(b) Dan, Erika and Fatik share \$540 in the ratio 4 : 5 : 3 .

Find the amount that Erika receives.

\$ ..... [2]

3. Question | 4024 May-June 2025 P2 V2 Q7

7 Chris wants to exchange \$350 for euros (€) at the bank.
The bank only gives euros in multiples of €5.
The exchange rate is \$1 = €0.92 .

Calculate the number of euros he receives and his change from \$350.

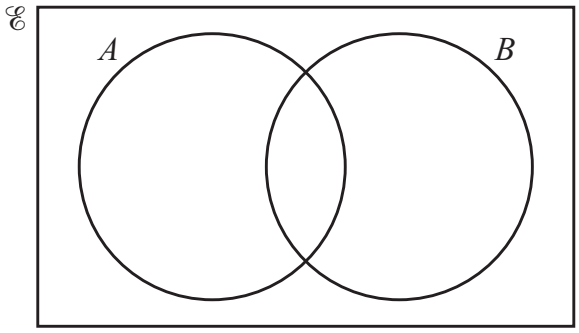
Chris receives € .....

His change is \$ .....

[3]

4. Question | 4024 May-June 2025 P2 V2 Q9

9 **(a)** On the Venn diagram, shade the region represented by $(A \cap B)'$.



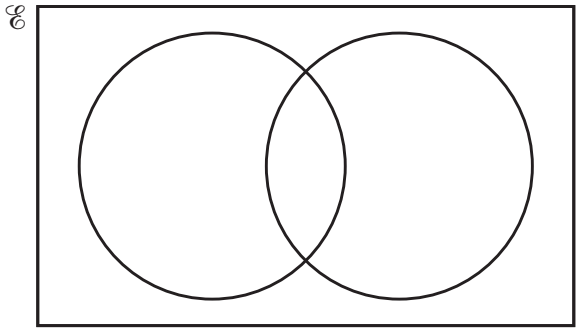
[1]

(b) In a class of 22 students:

- 12 play the piano
- 9 play the guitar
- 6 do **not** play the piano or the guitar.

Find the number of students who play both the piano and the guitar.

You may use the Venn diagram to help you.



..... [2]

5. Question | 4024 May-June 2025 P2 V2 Q11

11 **(a)** Zaya invests $4500 in a savings account.
The account pays **simple interest** at a rate of 3.2% per year.

Calculate the value of the investment at the end of 5 years.

$ ..... [3]

(b) Aisha invests $2750 in a different savings account.
This account pays **compound interest** at a rate of 2.1% per year.

Calculate the total amount of interest she receives at the end of 3 years.

$ ..... [3]

6. Question | 4024 May-June 2025 P2 V2 Q16

16 The population of Kenya is 5.71×10^7 people.
The area of Kenya is $6 \times 10^5 \text{ km}^2$.
The population density is the number of people per km^2.

Calculate the population density of Kenya.

..... people / km^2 [2]

7. Question | 4024 May-June 2025 P2 V2 Q23

23 Zara cycles a distance of 500 metres, correct to the nearest 5 metres.
This takes 24.7 seconds, correct to the nearest 0.1 seconds.

Calculate the lower bound of her average speed.

..... m/s [3]

8. Question | 4024 May-June 2025 P2 V3 Q1

1 **(a)** Write 4.2358 correct to 2 decimal places.

..... [1]

(b) Write 34 159 correct to 2 significant figures.

..... [1]

9. Question | 4024 May-June 2025 P2 V3 Q3

3 Ang and Bou share \$104 in the ratio $7:6$.

Calculate the amount they each receive.

Ang \$ .....

Bou \$ .....
[2]

10. Question | 4024 May-June 2025 P2 V3 Q9

9 **(a)** Ameerah invests $480 in a savings account.
The account pays **simple interest** at a rate of 3.6% per year.

Calculate the value of the investment at the end of 5 years.

$ ..... [3]

(b) Ben invests $600 in a different savings account.
The account pays **compound interest** at a rate of 2.7% per year.

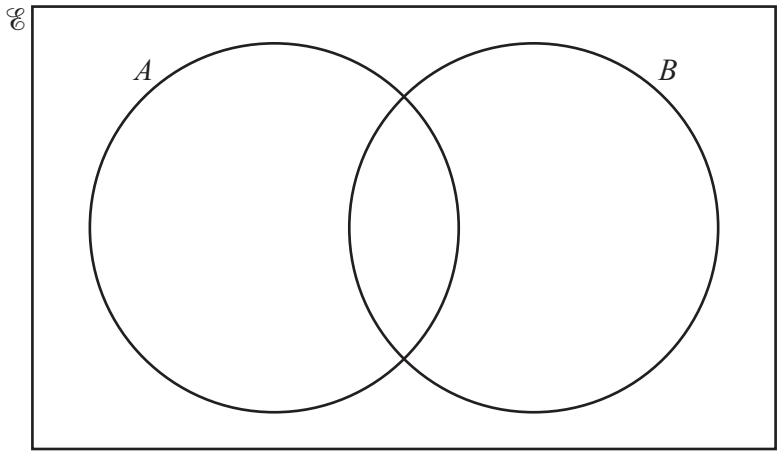
Calculate the total amount of interest paid to Ben at the end of 4 years.

$ ..... [3]

11. Question | 4024 May-June 2025 P2 V3 Q11

11 $\mathscr{E} = \{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$
$A = \{x : x \text{ is a prime number}\}$
$B = \{x : x \text{ is a factor of } 36\}$

(a) Complete the Venn diagram.



[2]

(b) List the elements of $A \cup B'$.

..... [1]

(c) Find $\text{n}(A \cap B')$.

..... [1]

12. Question | 4024 May-June 2025 P2 V3 Q13

13 **(a)** Write 1.23×10^{-4} as an ordinary number.

..... [1]

(b) $(8.2 \times 10^4) + (x \times 10^y) = 9.1 \times 10^5$

Find the value of x and the value of y.

$x =$ .....

$y =$ .....

[2]

13. Question | 4024 May-June 2025 P2 V3 Q21

21 The width of a rectangle is 5.4 cm, correct to the nearest 0.1 cm.

(a) Write down the upper bound of the width of the rectangle.

..... cm [1]

(b) The perimeter of the rectangle is 26.4 cm, correct to the nearest 0.1 cm.

Calculate the lower bound of the length of the rectangle.

..... cm [2]

14. Question | 4024 Oct-Nov 2025 P2 V1 Q1

1

52	$\sqrt{169}$	27	$\sqrt{8}$	$\frac{12}{23}$	49

From the list, write down

(a) a square number

..... [1]

(b) a cube number

..... [1]

(c) a factor of 26

..... [1]

(d) an irrational number.

..... [1]

15. Question | 4024 Oct-Nov 2025 P2 V1 Q2

2 **(a)** Insert **one** set of brackets to make the calculation correct.

$$4.2 - 3 \times 5 + 1.2 = 7.2$$

[1]

(b) Insert **one** set of brackets to make the calculation correct.

$$5 - 3^2 - \sqrt[3]{64} + 2 = -10$$

[1]

16. Question | 4024 Oct-Nov 2025 P2 V1 Q6

6 Work out.

$$\frac{12 - \sqrt[3]{6}}{0.3^2}$$

Give your answer correct to 2 decimal places.

..... [2]

17. Question | 4024 Oct-Nov 2025 P2 V1 Q8

8 John invests $240 in an account that pays simple interest at a rate of 2.35% per year.

Calculate the total amount of interest he receives at the end of 5 years.

$ ..... [2]

18. Question | 4024 Oct-Nov 2025 P2 V1 Q9

9 The exchange rate between euros (€) and pounds (£) is €1 = £0.88 .
The exchange rate between dollars ($) and pounds (£) is $1 = £$x$.

Ling changes €500 into dollars.
She receives $536.58 .

Work out the value of x.

$x =$ ..... [3]

19. Question | 4024 Oct-Nov 2025 P2 V1 Q12

12 **(a)** Write 0.0142 in standard form.

..... [1]

(b) The numbers in the calculation are written in standard form.

$$(3.2 \times 10^{-4}) \times (x \times 10^{y}) = 2.6 \times 10^{3}$$

Find the value of x and the value of y.

$x =$ .....

$y =$ .....
[2]

20. Question | 4024 Oct-Nov 2025 P2 V1 Q14

14 The population of a country increases exponentially at a rate of 3.6% per year.
On 1st January 2024 the population of the country is 5.4 million.

Calculate the number of **complete** years it will take for the population to reach 8 million.

..... years [3]

21. Question | 4024 Oct-Nov 2025 P2 V1 Q15

15 $x = 2^2 \times 3^{n+1} \times 7$

$y = 2^n \times 3^n \times 7^4$

n is a positive integer greater than 2.

Find the highest common factor (HCF) of x and y.
Write your answer as the product of prime factors in terms of n.

..... [2]

22. Question | 4024 Oct-Nov 2025 P2 V1 Q19

19 A car travels 320 km, correct to the nearest 10 kilometres.
This journey takes 5.2 hours, correct to the nearest 0.1 hour.

Calculate the lower bound for the average speed of the car.

..... km/h [3]

23. Question | 4024 Oct-Nov 2025 P2 V2 Q1

1 Work out $\frac{75.66 - 40.23}{2.19}$.

Give your answer correct to 2 decimal places.

..... [2]

24. Question | 4024 Oct-Nov 2025 P2 V2 Q5

5 **(a)** Sofia invests $400 in a savings account.
The account pays simple interest at a rate of 2.8% per year.

Calculate the total amount of interest Sofia receives at the end of 3 years.

$ ..... [2]

(b) Luis invests $400 in a different savings account that also pays simple interest.
The rate of interest for this account is 0.4% per year **more** than the rate for Sofia's account.

Calculate how much more interest Luis receives each year than Sofia receives each year.

$ ..... [1]

25. Question | 4024 Oct-Nov 2025 P2 V2 Q12

12 **(a)** Write $372\,000\,000$ in standard form.

..... [1]

(b) Work out.

$$\frac{2.21 \times 10^5}{6.5 \times 10^6}$$

Give your answer in standard form.

..... [2]

26. Question | 4024 Oct-Nov 2025 P2 V2 Q14

14 $N = 2 \times 3^x \times 5^y$

The lowest common multiple (LCM) of N and 360 is 16 200.

(a) Find the value of x and the value of y.

$x =$ .....

$y =$ ..... [2]

(b) Find the highest common factor (HCF) of N and 360.

..... [1]

(c) k is a positive integer.
kN is a cube number.

Find the smallest possible value of k.

$k =$ ..... [1]

27. Question | 4024 Oct-Nov 2025 P2 V2 Q15

15 The mass of a bag of potatoes is 2.5 kg, correct to the nearest 0.1 kg.

(a) Write down the upper bound and the lower bound for the mass of a bag of potatoes.

Upper bound = ... kg

Lower bound = ... kg [2]

(b) The mass of a box is 8.0 kg, correct to the nearest 0.1 kg.
Bags of potatoes are packed into the box.

Calculate the upper bound for the total mass of a box containing 12 bags of potatoes.

..... kg [2]

28. Question | 4024 Oct-Nov 2025 P2 V2 Q16

16 The population of a town decreases exponentially at a rate of x% per year.
The population of the town on 1 January 2020 was 120 000.
The population of the town on 1 January 2023 was 102 885.

(a) Find the value of x.

$x =$ ..... [3]

(b) After 1 January 2023 the population of the town starts to increase exponentially at a rate of 1.6% per year.

Find the year in which the population on 1 January first becomes more than 120 000.

..... [3]

29. Question | 4024 Specimen 2025 P2 Q1

1 Calculate.

$$\frac{4}{\sqrt{0.0025}}$$

..... [1]

30. Question | 4024 Specimen 2025 P2 Q2

2 Work out 40% of $530.

$ ..... [1]

31. Question | 4024 Specimen 2025 P2 Q3

3 This is part of a bus timetable from New York to Raleigh.

New York	09 15
Baltimore	13 40
Washington	15 20
Richmond	19 00
Petersburg	19 40
Raleigh	22 15

(a) Work out the journey time from New York to Petersburg.
Give your answer in hours and minutes.

..... hours ..... minutes [1]

(b) Arjan arrives at the bus station in Washington at 1.36 pm.

Work out how long he waits for the 09 15 bus from New York to arrive.
Give your answer in minutes.

..... minutes [1]

32. Question | 4024 Specimen 2025 P2 Q4

4 Pens cost 53 cents each.

(a) Work out the maximum number of pens Maryam can buy with $15.

..... pens [2]

(b) Work out the change she receives in cents.

..... cents change [1]

33. Question | 4024 Specimen 2025 P2 Q7

7 Alex buys a shirt at a price of £14.75 .
Pedro buys a shirt at a price of $21.99 .
The exchange rate is $1 = £0.73 .

Calculate how much more Pedro pays than Alex.
Give your answer in dollars and cents correct to the nearest cent.

$ ..... [2]

34. Question | 4024 Specimen 2025 P2 Q9

9 3.56 5 $\sqrt{196}$ 8 $\sqrt{7}$ 12

From the list, write down a number that is

(a) a multiple of 3

..... [1]

(b) a cube number

..... [1]

(c) a prime number

..... [1]

(d) an irrational number.

..... [1]

35. Question | 4024 Specimen 2025 P2 Q17

17 An insect population decreases at a rate of 12% per year.
The insect population on 1st January 2022 is 3.7 million.

Calculate the number of complete years it will take for the insect population to first fall below 1 million insects.

..... years [3]

36. Question | 4024 Specimen 2025 P2 Q22

22 The length of a pencil is given as 16 cm, correct to the nearest cm.
The length of a pen is given as 14.7 cm, correct to the nearest mm.

Calculate the upper bound for the difference between the length of the pencil and the length of the pen.

..... cm [3]

37. Question | 4024 May-June 2026 P2 V2 Q1

1 Write these numbers in order of size, starting with the smallest.

$\frac{2}{5}$ 0.42 38%

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

smallest

38. Question | 4024 May-June 2026 P2 V2 Q4

4 Calculate.

$$\frac{2.5^4}{3.09 + \sqrt{16.98}}$$

Give your answer correct to 2 decimal places.

..... [2]

39. Question | 4024 May-June 2026 P2 V2 Q6

6 Sara and Bill share some money in the ratio $5 : 6$.
Sara receives \$60.

(a) Calculate the amount Bill receives.

\$ ..... [2]

(b) Sara uses her \$60 to buy books.
Each book costs \$7.

Find the maximum number of books she can buy.

..... [2]

40. Question | 4024 May-June 2026 P2 V2 Q9

9 Amira walks from her home to her friend's house.
She leaves home at 09 35.
She walks a total of 8 km at an average speed of 5 km / h.

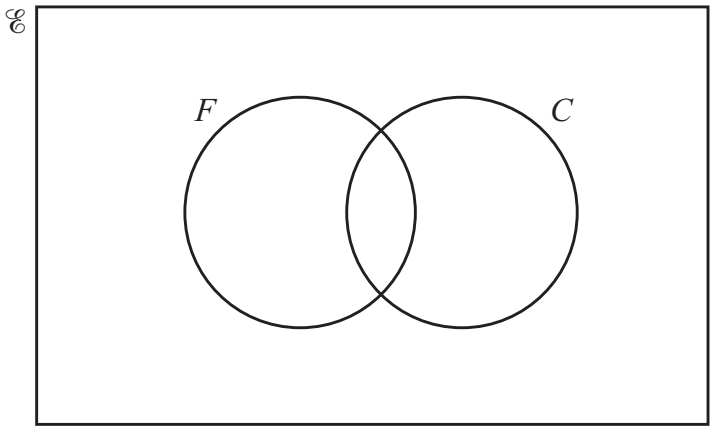
Work out the time she arrives at her friend's house.

..... [3]

41. Question | 4024 May-June 2026 P2 V2 Q10

10 $\mathscr{E} = \{x : x \text{ is an integer and } 1 \leqslant x \leqslant 9\}$
$F = \{x : x \text{ is a factor of } 6\}$
$C = \{x : x \text{ is a cube number}\}$

(a) Complete the Venn diagram.



[2]

(b) Find $\text{n}(F \cup C)'$.

..... [1]

42. Question | 4024 May-June 2026 P2 V2 Q11

11 In a sale, a shop reduces all prices by 32%.
Before the sale, a dress costs \$56.

Work out the sale price of the dress.

\$ ..... [2]

43. Question | 4024 May-June 2026 P2 V2 Q14

14 The population of a village is 1260.
The population grows exponentially at a rate of 1.7% per year.

Calculate the increase in the population at the end of 3 years.

..... [3]

44. Question | 4024 May-June 2026 P2 V2 Q20

20 The area of a rectangle is $69.5\,\text{m}^2$, correct to the nearest $0.5\,\text{m}^2$.
The width of the rectangle is 3.8 m, correct to the nearest 0.1 m.

Calculate the upper bound of the length of the rectangle.

..... m [3]

45. Question | 4024 May-June 2026 P2 V3 Q1

1 **(a)** Write 412 396 correct to the nearest 100.

..... [1]

(b) Write 3.1349 correct to 2 decimal places.

..... [1]

46. Question | 4024 May-June 2026 P2 V3 Q2

2 Flo buys 5 cups of tea for $2.50 each and 3 cups of coffee for $3.40 each.

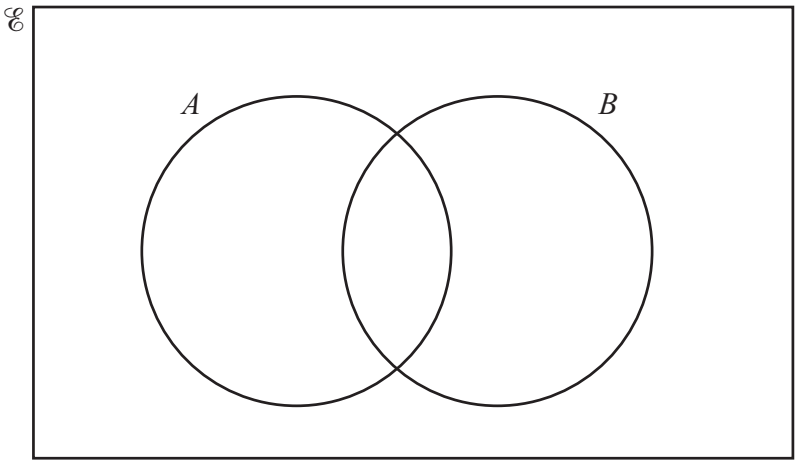
Work out how much change she receives from $30.

$ ..... [3]

47. Question | 4024 May-June 2026 P2 V3 Q11

11 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{x : x \text{ is a factor of } 10\}$
$B = \{x : x \text{ is a multiple of } 2\}$

(a) Complete the Venn diagram.



[2]

(b) List the elements of $(A \cup B)'$.

..... [1]

(c) Find $\mathrm{n}(A' \cup B)$.

..... [1]

48. Question | 4024 May-June 2026 P2 V3 Q14

14 The price of a computer is reduced by 18% in a sale.
The sale price of the computer is $303.40 .

Calculate the price of the computer before the sale.

$ ..... [2]

49. Question | 4024 May-June 2026 P2 V3 Q17

17 Zahir invests $3000 in a savings account which pays compound interest at a rate of x% per year.
At the end of 6 years, there is $3918 in the account.

Calculate the value of x.

$x =$ ..... [3]

50. Question | 4024 May-June 2026 P2 V3 Q18

18 The width, w cm, of a rectangle is 7 cm, correct to the nearest centimetre.

(a) Complete this statement about the value of w.

..... $\leqslant w <$ ..... [2]

(b) The area of the same rectangle is 161.8 cm^2, correct to the nearest 0.1 cm^2.

Calculate the upper bound for the length of the rectangle.

..... cm [2]