1ST YEAR MATHS - SUMMER 2025.

Q1 Oisín Argaud

(Suggested maximum time: 5 minutes)

116/120

Jakub makes a 4-digit password, using the digits of his date of birth:

2	5	1	0	9	8

He doesn't use any digit more than once.

(a) Write down a password Jakub could make that is:

97%

(96·6)

(i) an odd number

has to end odd

5	0	9	1

(ii) a multiple of 5.

has to end 5/0

2	1	9	5

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(b) Write down the **largest** number that Jakub could use as a password.

start with the largest and get smaller

9	8	5	2

✓

10:40

36 40 each

Q 2.

(Suggested maximum time: 10 minutes)

In a raffle, there is a choice of three different prizes, **A**, **B**, or **C**.
The winner of the raffle chooses **one** prize.

(a) Prize A: The winner gets some money each day for six days.
She gets €10 on Day 1, €15 on Day 2, and so on until Day 6.
Each day after Day 1, she gets **€5 more** than she got the day before.

(i) Complete the table below to show how much money she gets each day for Prize A.

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
Prize A	€10	€15	€20	€25	€30	€35

15+5=20+5=25+5=30+5=35

(ii) What kind of sequence is made by the daily amounts that the winner gets for Prize A?
Give a reason for your answer.

Kind of sequence: (Tick (✓) **one** box only) Linear ☑ Quadratic ☐ Exponential ☐

Reason: It changes by the same amount each time

20

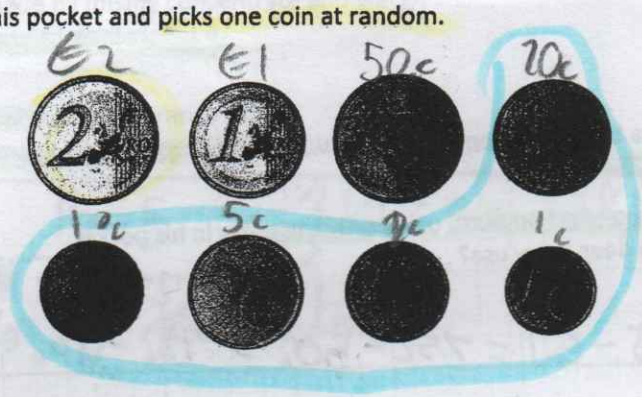
(iii) Find the **total** amount of money the winner will get if she chooses Prize A.

10+15+20+25+30+35=€135

Q3.

(Suggested maximum time: 10 minutes)

Barry has one of each coin in the euro currency in his pocket.
He puts his hand in his pocket and picks one coin at random.

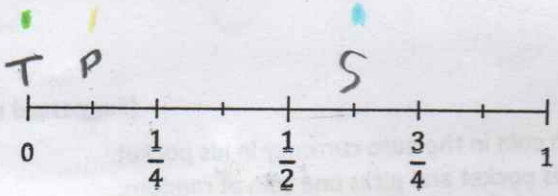


(a) Fill in the table below to show the probability of each of the events **P**, **S**, and **T**.

Event	Description	Probability
P	Barry picks a €2 coin.	1 coin 8 in total Answer = 1/8
S	Barry picks a coin worth less than 50 cent.	5 coins 8 in total Answer = 5/8
T	Barry picks a €3 coin.	0 coins 8 in total Answer = 0/8

Q3... continued...

(b) Write each of the letters **P**, **S**, and **T** in the correct place on the probability scale below to show the probability of each event.



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(c) Barry buys a bus ticket from a machine which does not give change.
It costs €1·75.

Barry pays the exact amount, using only the coins in his pocket.
Which coins does Barry use?

2, 1, 10, 1, 2!

€1·75 − €1 = 75c − 50c = 75c − 20c − 5c − 5c = 0

€1, €0·50, €0·20, €0·05

(d) How much money will Barry have left after paying for his ticket?

€2 + €0·10 + €0·02 + €0·01 = €2·13

5

€2·13

Q4

(Suggested maximum time: 10 minutes)

Ciara is making an orange drink.
The orange drink is made by mixing concentrate and water.
The ratio of concentrate to water is 1 : 4.

(a) Ciara makes 15 litres of the orange drink.
Work out how many **litres of concentrate** Ciara uses to make the drink.

1+4=5 15÷5=3 3x1=3 3x4=12
3 litres of concentrate

(b) Ciara sells glasses of the orange drink for **€0·20 each.**
Each glass contains 250 ml of the drink.

She sells 10 litres altogether.
The total cost was €5·50.

Work out her **profit** as a **percentage** of the total cost.
Give your answer correct to 1 decimal place.

10L÷750mL=40 40x20=800c=€8
€5·50=100% 5·5÷100=0·055=1%
8÷0·055=145·45

145·5%

40 drinks 20c each €8 total €5 50 cost
€8=145·5% of €5·50

6/10

abcdefghijklmn

Q5.

(Suggested maximum time: 10 minutes)

A juice bar makes smoothies in two sizes, small and large.
Their menu is shown below.

Smoothie	Small	Large
Strawberry Slurp	€2·00	€4·00
Banana Boost	€1·50	€3·00
Apple Swirl	€1·80	€3·60
Lemon Crush	€2·10	€4·20

Gary buys a **small** Lemon Crush and a **large** Apple Swirl.

(a) Find the total cost of these two smoothies.

2.1 + 3.6 = 5.7

€5.70 ✓5

Elaine wants to buy two small smoothies and one large smoothie. She has €7 to spend.

(b) **Complete** the sentence to show one combination of smoothies that Elaine could buy.
Find the total cost of these three smoothies.

Elaine could buy a small Strawberry Slurp €2, a small Apple Swirl €1·80, and a large Banana Boost €3.

Total cost of these three smoothies:

2 + 3 + 1·8 = 6·8

€6·80 ✓5

The juice bar makes another smoothie, an Orange Twist.
A **small** Orange Twist costs €1·60.

(c) Use the prices in the menu above to work out how much a **large** Orange Twist costs.
There is a relationship between the prices of the small and large smoothies in the menu.

Strawberry Slurp 4 (large) ÷ 2 (small) = 2
It's double
1·60 × 2 = 3·2

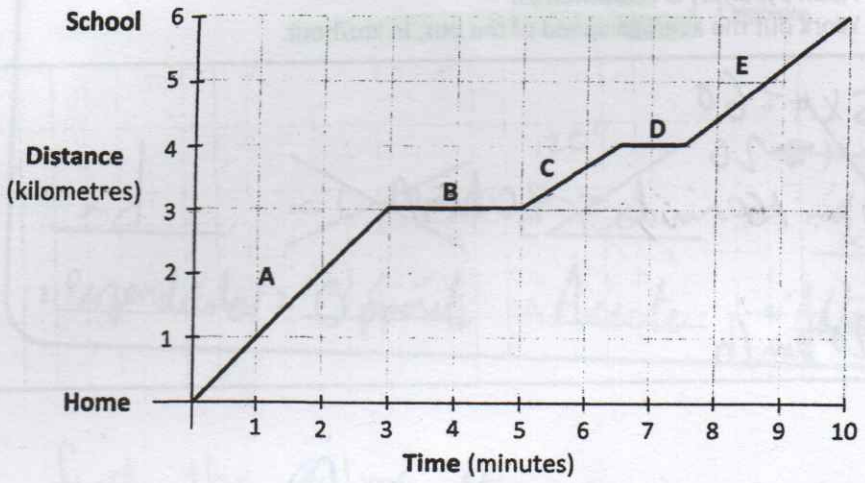
€3·20

✓5

Q6.

(Suggested maximum time: 10 minutes)

Alex travels on a bus to get to school each morning.
The following graph shows the distance travelled along the route on one particular morning.
The graph is in five stages, labelled **A**, **B**, **C**, **D**, and **E**.



(a) During stage **B**, the bus was stopped.

(i) For how many minutes was the bus stopped during stage **B**?

5 − 3 = 2 Answer: 2

(ii) During which stage, other than stage **B**, was the bus stopped?

Answer: D

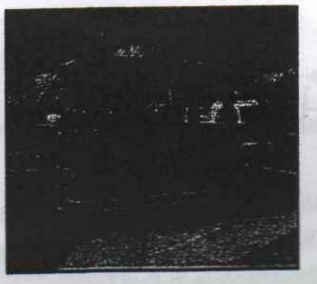
✓ 5

(b) The bus is moving at its fastest at stage **A**.
How do you know this by looking at the graph?

The line is the steepest at stage A

Q6 continued....

(c) Fiadh takes a different bus to school.
This bus takes 15 minutes to get to school.



(i) Write 15 minutes as a fraction of one hour.

Answer: $\frac{1}{4}$

(ii) Fiadh's journey is 5 kilometres.
Work out the average speed of the bus, in km/hour.

15 x 4 = 60
5 x 4 = 20
20 km / 60 minutes = 20 km/h

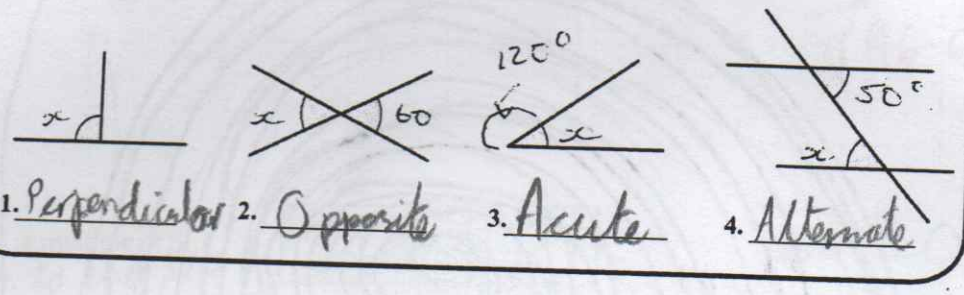
20 km/h

Q7.

studyclix

1. Fill in the label for **each** diagram by selecting from the given list.

- ~~Acute~~
- ~~Alternate~~
- ~~Perpendicular~~
- ~~Opposite~~



1. Perpendicular 2. ~~Opposite~~ 3. Acute 4. Alternate

2. find the value of x in each of the diagrams above

1. $x = 90°$ because it's a right angle
2. $x = 60°$ because of opposite angles
3. $x = 60°$ because of straight line
4. $x = 50°$ because of alternate angles

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