To be completed by candidate

NSN | | | | | | | | | |

School Code | | | | |

SUPERVISOR'S USE ONLY

32406 TERM 3

Draw a cross through the box (☒) if you have NOT written in this booklet

NZQA | Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Numeracy 2024

32406 Apply mathematics and statistics in a range of everyday situations

Credits: Ten

OUTCOMES	
1	Formulate mathematical and statistical approaches to solving problems in a range of everyday situations.
2	Use mathematics and statistics to meet the numeracy demands of a range of everyday situations.
3	Explain mathematical and statistical responses to situations.

Enter your National Student Number (NSN) and School Code into the space above.

You should attempt ALL the questions in this booklet.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–23 in the correct order and that none of these pages is blank.

Do not write in the margins (⁞⁞⁞⁞⁞). This area will be cut off when the booklet is marked.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

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QUESTION ONE: Turtles

The first turtles lived around 230 million years ago.

(a) Did turtles live around the same time as dinosaurs? Use information from the chart to explain your answer.

Here are the first few rows of a data set. There are 1000 turtles in the whole table.

Species	Gender	Shell length (cm)	Weight (kg)
Green	Female	87	108
Loggerhead	Male	76	89
Green	Male	123	145
Hawksbill	Female	65	71
Hawksbill	Female	54	64
Loggerhead	Male	81	93

(b) Write a question that could be answered using information from this table.

Only one in every 100 baby turtles survive to become adults.

(c) Which decimal is the probability of a one in 100 chance?
Tick (✓) the correct answer.

○ 1.0 ○ 0.1 ○ 0.01 ○ 0.001 ○ 0.0001

This graph shows the numbers and types of turtles found in Fiji, in the wet and dry seasons.

Numbers and types of turtles found in Fiji

A Fiji newspaper uses the figures from the dry season to claim:

"Only 23 Hawksbill turtles were found. This species is at risk of extinction in our waters."

(d) Do you agree? Use information from the graph to explain your answer.

This pattern is made using a repeating turtle figure.

(e) Which pattern in the box below matches the turtle pattern?

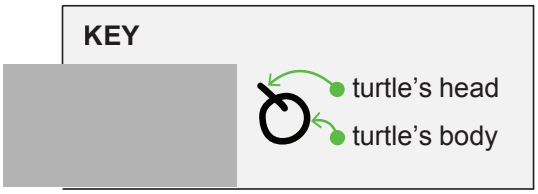
Circle the correct answer.

(i)

(ii)

(iii)

(iv)

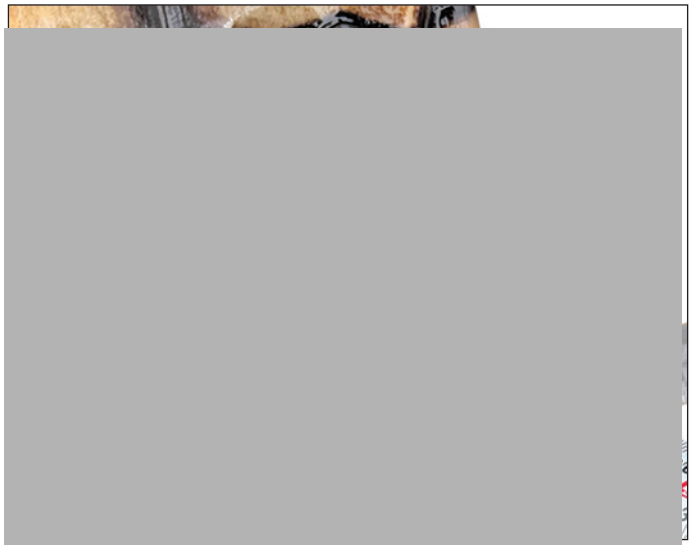


Turtles need a lot of water in their tank.

For **every centimetre** of the turtle's shell length, the tank must hold 15 litres of water.

(f) How much water will this turtle need in its tank?

_____ litres



Measuring a turtle's shell.

QUESTION TWO: Bargains at the op shop

An op shop is a place where people buy things that are recycled. Here are directions to get to an op shop.

(a) If walking one kilometre takes 12 minutes, how many kilometres can you walk in one hour?

_____ km

Here is the price of a pair of jeans at the op shop. These jeans are priced at $120 when new.

(b) What percentage **of the new price for jeans**, is the op shop price?

_____ %

Here is an image of a plate.

(c) (i) Does the whole plate have **reflectional** (mirror) symmetry?

Tick (✓) the correct answer.

Yes ◯ No ◯

(ii) Does the whole plate have **rotational** (turn) symmetry?

Tick (✓) the correct answer.

Yes ◯ No ◯

In the op shop, there is a double bed.

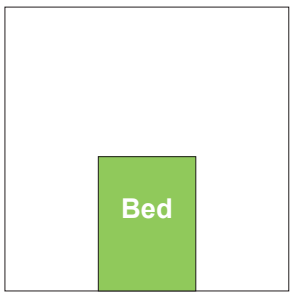
It measures 1.37 m across and 1.88 m long.

A bedroom measures 3.5 m × 3.5 m.

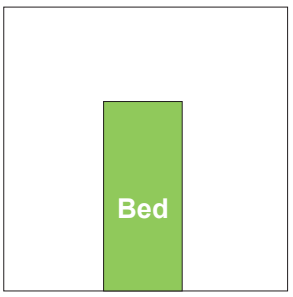
(d) Which diagram best shows how the double bed will fit in the bedroom?

Tick (✓) the correct answer.

(i) ◯



(ii) ◯



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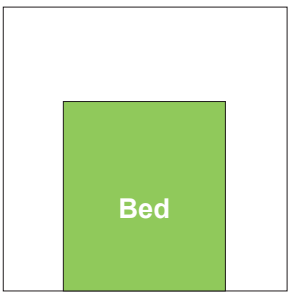
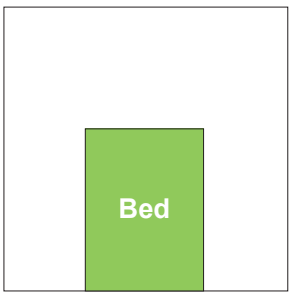


(iv) ◯



This jar holds 20 glasses of water.

A glass holds 250 mL of water.

(e) How many **litres** of water does the jar hold?

_____ litres

A TV presenter claims the percentage of New Zealanders buying at op shops has trebled in the 20 years from 2002 to 2022.

Note: "Trebled" means three times as much.

(f) Is the TV presenter right?
Use information from the graph to say why you agree, or disagree, with their claim.

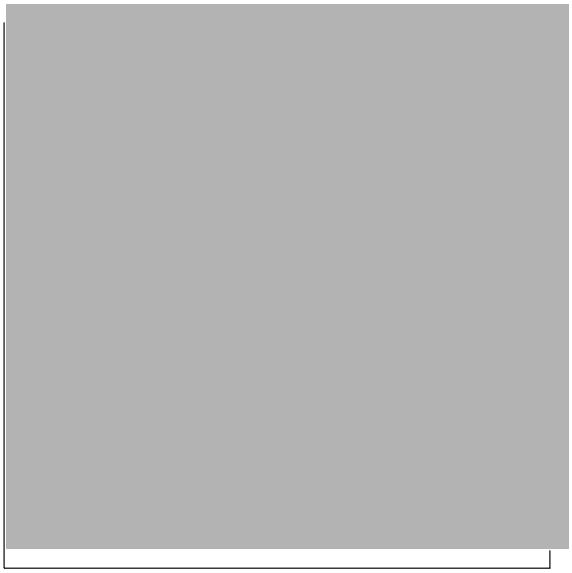
QUESTION THREE: Kaimoana (Seafood)

Awa wants to collect pipi, a tasty shellfish.

Awa can collect 60 pipi per hour.

(a) How long, in **hours and minutes**, will it take Awa to collect 150 pipi?

_____ hours, and _____ minutes



Awa holding pipi.

Here is a tide chart for Saturday 7 October and the first part of Sunday 8 October.

(b) Awa wants to collect seafood at **low tide**. About what time can Awa next collect seafood on Sunday 8 October?

_____

Awa wants to set a crab trap using bait.

Awa's koro (grandfather) recommends using a bait mixture that is ⅜ squid and the rest is chicken.

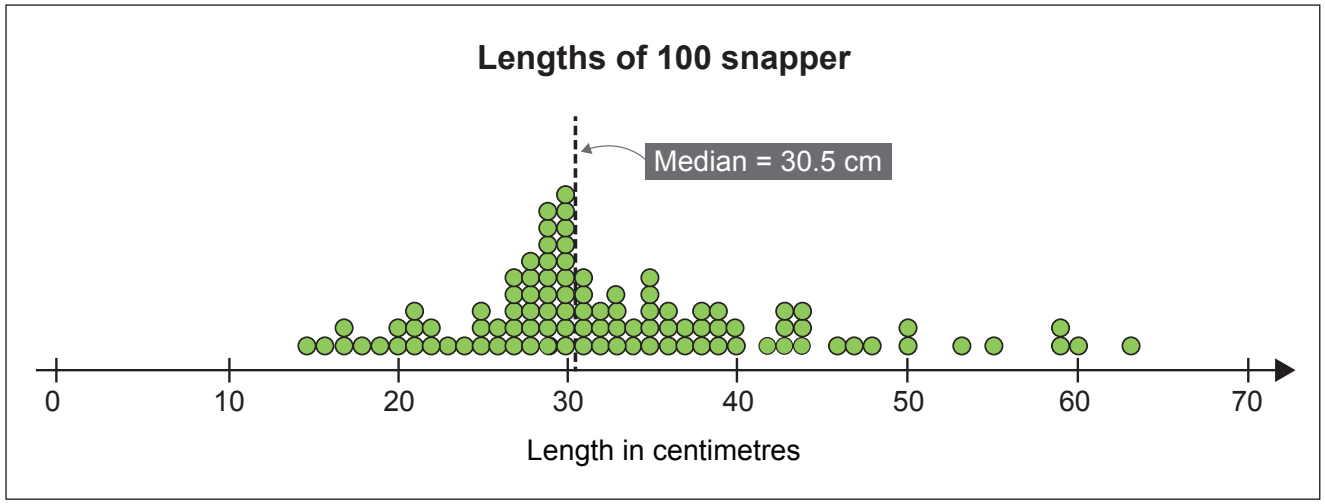
(c) If Awa has 150 g of squid, how many grams of chicken does Awa need?

_____ g

People who catch fish can only keep a snapper if it has a **minimum** length of 30 cm (measured from the V in its tail). If it is shorter than 30 cm it must be put back into the sea.

(d) The length of this snapper rounds up to 30 cm. Should Awa keep the snapper or put it back into the sea? Explain your answer using measurements.

Awa sees this graph about the lengths of 100 snapper.



(e) Awa thinks that to catch five snapper to feed the whānau he will need to hook 10 snapper and put five of them back into the sea. Is Awa right? Use ideas about probability and numbers from the graph to explain your answer.

Awa has a boat with a small two-stroke motor. The fuel for the motor is petrol mixed with oil in a ratio of 50:1 (about 2% oil).

(f) If Awa has 10 litres of petrol, how much oil, in **millilitres,** should he add?

_____ mL

Awa's boat with a small two-stroke motor.

QUESTION FOUR: Driving lessons

Deena is learning to drive.
A one-hour driving lesson costs $80.

If Deena takes five lessons, there is a 30% discount.

(a) How much do five driving lessons cost, with the discount?

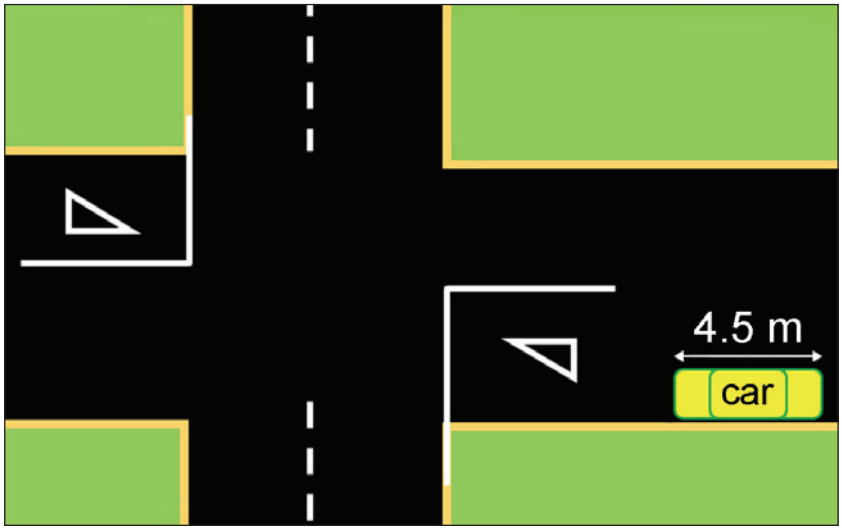
$ _____

Deena learning to drive.

A car is parked legally if it is **six metres or more** from the corner.

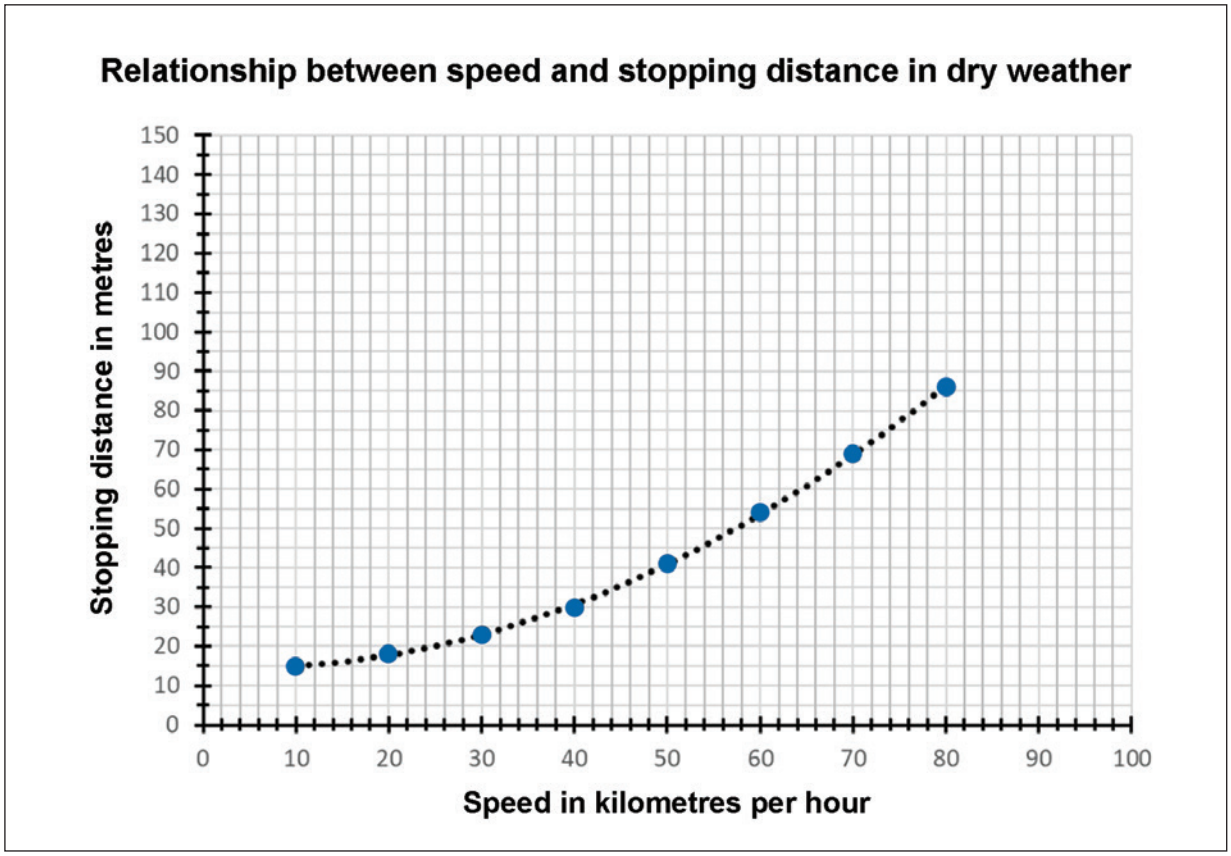
Deena knows her car is 4.5 metres long.

Deena parks **1½ car lengths** from the corner.



(b) Is Deena's car parked legally? Explain your answer using measurements.

This graph shows the distance that a car needs to stop at different speeds in dry weather.



Deena's car is moving at 100 kilometres per hour.

(c) About how much distance will her car take to stop?

_____ m

When Deena stops at the fuel station, the gauge on her car looks like this.

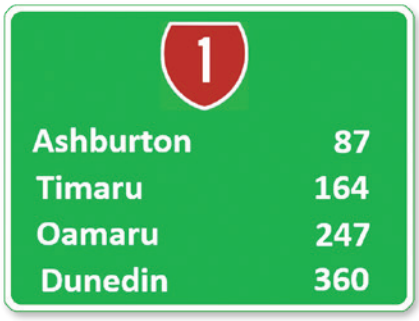
Deena knows that the fuel tank holds 48 litres when it is full.

(d) About how many litres of fuel does Deena need to buy to fill the tank?

_____ litres

Deena drives out of Christchurch on her way to Dunedin.

She sees this road sign, just out of Christchurch.



(e) When Deena reaches Oamaru, about what fraction of her journey will she have completed?

Tick (✓) the fraction that is **closest** to the correct answer.

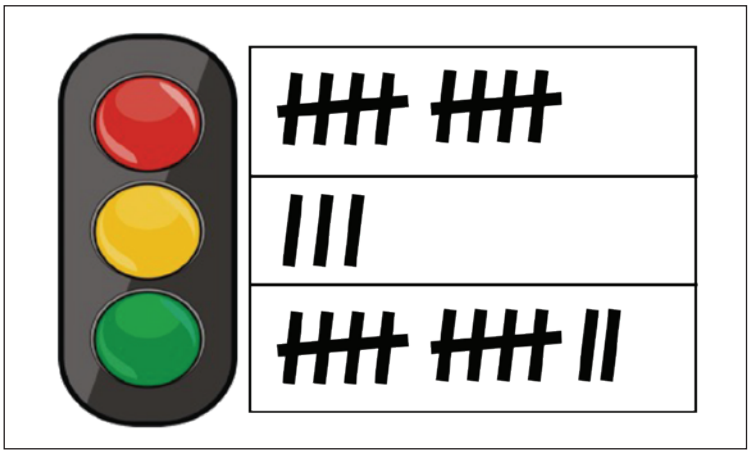
(i) 5/10 ◯ (ii) 6/10 ◯ (iii) 7/10 ◯ (iv) 8/10 ◯ (v) 9/10 ◯

Deena drives through the same set of traffic lights at the same time every day.

She makes a tally chart to see if there is a pattern to the colour of the lights.

Each mark shows the colour of the lights on one day.

Deena says, "The next time, the lights will probably be green."

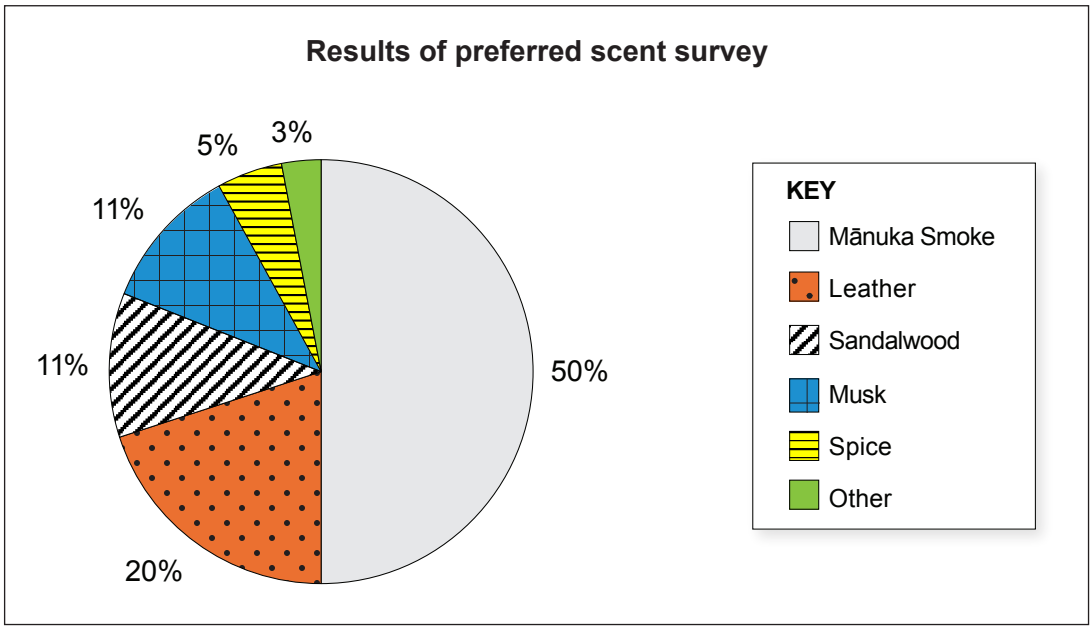


Deena's tally chart.

(f) Is she right? Explain your answer using percentages from Deena's tally chart.

QUESTION FIVE: Scented candles

Zion makes candles to sell at a school's market day. He sent out a survey to find out which scents people prefer. Here are the results.



(a) Which two scents make up over two thirds of the choices?

_____ and _____

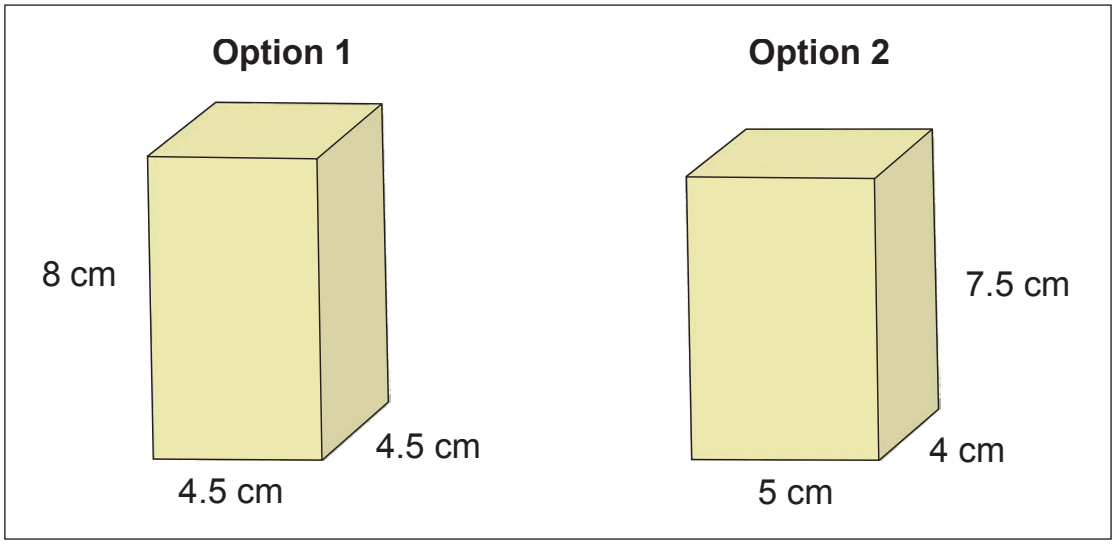
Zion makes candles using this ratio: five Mānuka Smoke candles to every two Leather candles (5:2).

(b) Zion makes 84 candles using the 5:2 ratio. How many Mānuka Smoke candles does he make?

_____ Mānuka Smoke candles

Zion also makes candles that are the shape of rectangular prisms.

To keep costs down, the candles cannot be too big.



Zion says that both options have a volume of 150 cm^3 or less.

(c) Is Zion right? Explain your answer using measurements from **both** options above.

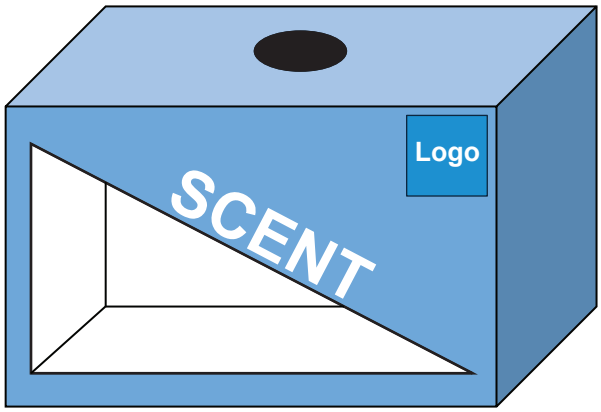
This table shows the cost of supplies. The total cost is for 84 candles.

Item	Total cost for 84 candles
Candle wax (13 kg)	$182.00
Candle wicks	$40.50
Candle scents	$33.70
Candle dyes	$21.00

(d) How much does it cost to make **one** candle?

$ _____

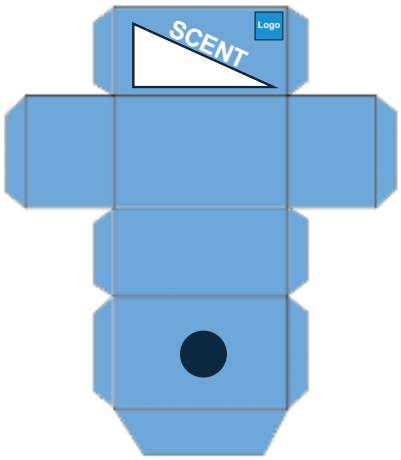
Zion needs to make a box to hold one candle. The box will look like this:



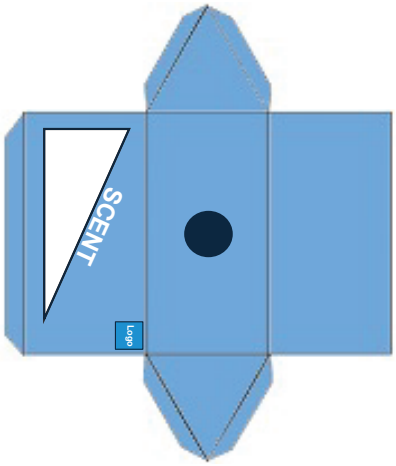
(e) Which net matches the box shown above?

Tick (✓) the correct answer.

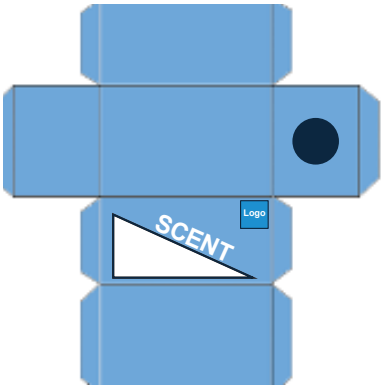
(i) ○



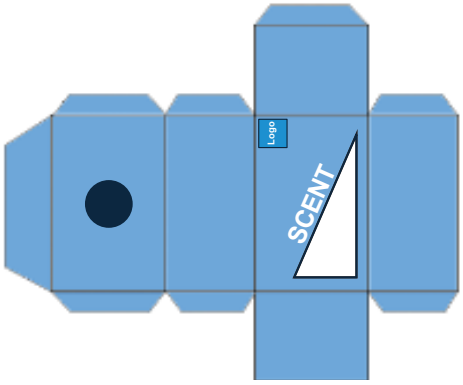
(ii) ○



(iii) ○



(iv) ○



This is the Market Day special deal for Scented Candles.

Jules wants to buy two candles as gifts for her father and grandfather.

(f) Should Jules buy three candles with 30% off, or two candles for $6 each?

Explain your answer using calculations.

Extra space if required.
Write the question number(s) if applicable.

QUESTION NUMBER

Extra space if required.
Write the question number(s) if applicable.

QUESTION NUMBER	

Extra space if required.
Write the question number(s) if applicable.

QUESTION NUMBER

Acknowledgements

Material from the following sources has been adapted for use in this assessment:

Question One

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Question Two

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Question Three

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Question Four

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Question Five

Candles, https://stock.adobe.com/images/candles-kit-design-realistic-wax-base-of-different-shapes-and-flames-burning-lights-vector-set-illustration-fire-candle-candlelight-realistic/383008655
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