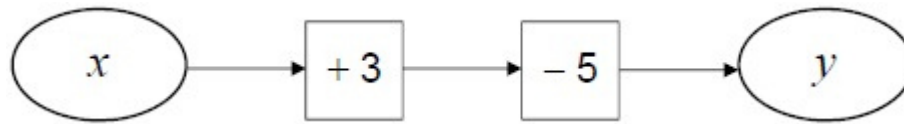


Q1.

(a) Alan is looking at number machine problems.



He says,

“If I know y I can work out x .
I subtract 3 then I add 5.”

Does this method work?

Give a reason for your answer.

.....

.....

.....

(1)

(b)



He says,

“If I know d I can work out c .
I divide by 3, then subtract 5.”

Does this method work?

Give a reason for your answer.

.....

.....

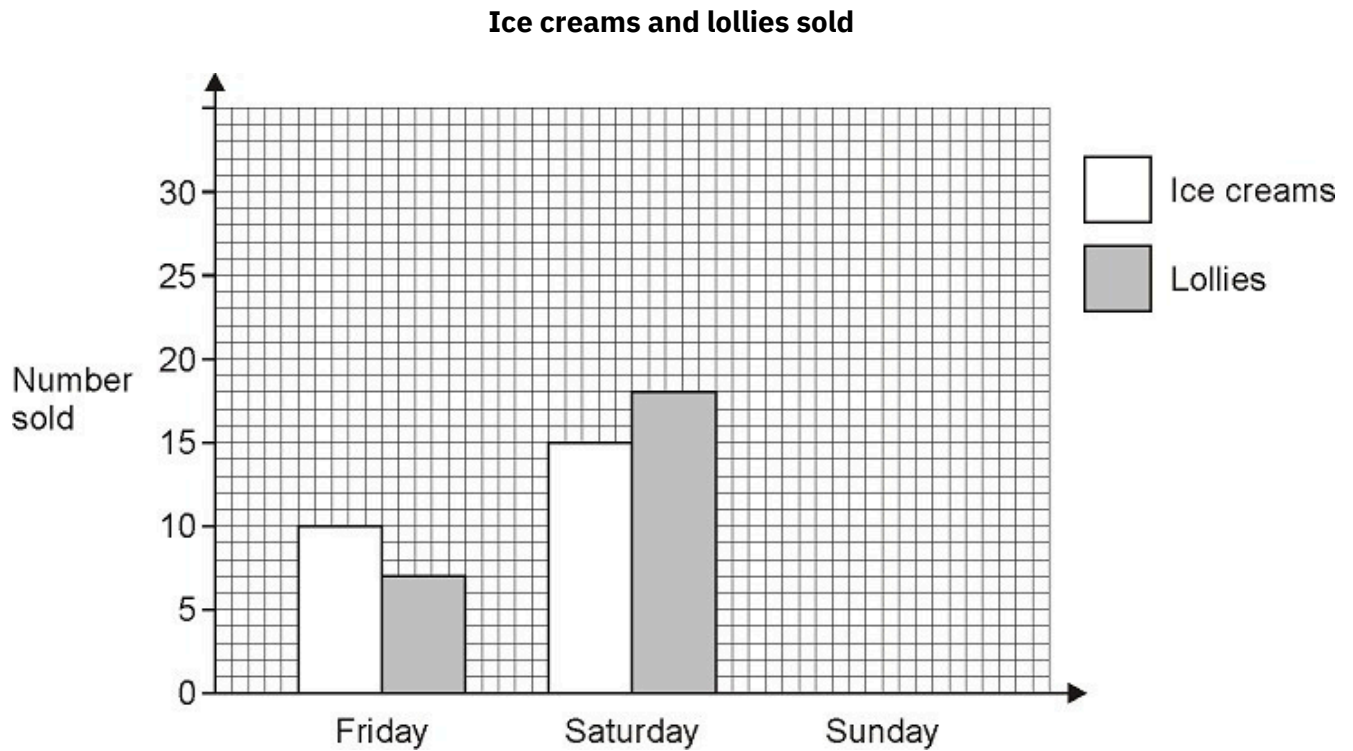
.....

(1)

(Total 2 marks)

Q2. Mira sells ice creams and lollies.

The bar chart shows the number sold on Friday and Saturday.



- (a) An ice cream costs £1.20
A lolly costs 80p.

How much money did Mira take from selling ice creams **and** lollies on **Friday**?

.....

.....

.....

Answer £

(3)

- (b) Mira sold ice creams and lollies on Friday, Saturday and Sunday.
Altogether she sold 80.

On Sunday, she sold 2 **more** lollies than ice creams.

Complete the bar chart for Sunday.

.....

.....

.....

.....

.....

(3)
(Total 6 marks)

Q3. A, B and C are sets of three cards.

- (a) Set B has the same **total** as Set A.
Set B has the same **median** as Set A.
Complete the cards in Set B.

Set A	12	18	15
Set B	20		

(2)

- (b) Set C has the same **total** as Set A.
Set C has the same **range** as Set A.
Complete the cards in Set C.

Set A	12	18	15
Set C	17		

(2)

(Total 4 marks)

Q4.(a) Lucy thinks people prefer dogs to cats.

She asks dog owners,

“Do you prefer dogs or cats?”

Is the data likely to be biased?

Give a reason for your answer.

.....

.....

(1)

(b) Sam asks 30 people,

“Do you prefer dogs or cats?”

One-fifth of the 30 people have no preference.

Twice as many choose cats as choose dogs.

Complete the table.

	Frequency
Dogs	
Cats	
No preference	
	Total = 30

(3)

(Total 4 marks)

Q5.This is a bill for coffee and buns.

The bill has coffee spilt on it.

Coffee	$2 \times \text{£}1.30$	$\text{£}2.60$
Buns	$\times 80\text{p}$	
Total		$\text{£}5.00$

How many buns were bought?
You **must** show your working.

.....

.....

.....

.....

Answer

(Total 3 marks)

Q6.

Here are two calculations.

$$4 + 4 - 4 - 4 = 0$$

$$(4 + 4) \div (4 + 4) = 1$$

Use brackets and the signs +, -, \times and \div to make the following calculations true.

$$4 \quad 4 \quad 4 \quad 4 = 2$$

$$4 \quad 4 \quad 4 \quad 4 \quad = \quad 3$$

(Total 2 marks)

Q7.

In this question you may **only** use the signs + and ×

Put signs into each calculation so that the answer is a multiple of 5

Show three different ways of doing this.

Give the answer for each calculation.

$$1 \quad \square \quad 2 \quad \square \quad 3 \quad \square \quad 4 \quad = \quad \square$$

$$1 \quad \square \quad 2 \quad \square \quad 3 \quad \square \quad 4 \quad = \quad \square$$

$$1 \quad \square \quad 2 \quad \square \quad 3 \quad \square \quad 4 \quad = \quad \square$$

(Total 3 marks)

Q8. Asif has **ten** coins.

He has only 10p, 20p and 50p coins.

The ten coins total £3.20

Work out how many of each coin he has.

.....

.....

.....

.....

.....
Answer 10p coins
..... 20p coins
..... 50p coins

(Total 3 marks)

Q9. Students are put into 9 groups.

5 groups each have 24 students.
The other 4 groups have an equal number of students.
Altogether there are 204 students.

How many students are there in each of the other 4 groups?

.....
.....
.....
.....
.....

Answer

(Total 3 marks)

Q10. Gas bills are calculated from the number of kilowatt hours used.

- (a) The first 2700 kilowatt hours of gas cost 8p each.
Extra kilowatt hours of gas cost 5p each.
A family uses 5850 kilowatt hours of gas.

Work out their gas bill.

.....
.....
.....
.....

.....
 Answer £

(4)

(b) Here is a formula for working out the profit a gas company makes from each bill.

$$\text{profit} = \text{bill} \times 0.07$$

What percentage of each gas bill is profit?

Answer %

(1)

(Total 5 marks)

Q11. Here is a menu in a café.

Menu	
Cheese on toast	£1.99
Ham sandwich	£2.49
Burger	£2.99
Crisps	55p
Tea	95p
Coffee	£1.20
Orange juice	£1.70
Cola	75p

(a) Alice buys a burger and a cola.

How much does she pay?

.....
 Answer £

(1)

- (b) Tom buys cheese on toast, orange juice and crisps.
He pays with a £5 note.

How much change does he get back?

.....
.....

Answer p

(3)
(Total 4 marks)

Q12.

Here are some instructions.

Start with a whole number
Add 3
Now divide by 4
Write down your answer

- (a) Amy starts with the number 17.

What answer should she write down?

.....
.....

Answer

(2)

- (b) Ben starts with a whole number.
His answer is bigger than 5 but less than 6.

Work out **all** the numbers he could have started with.

.....

.....
.....
.....

Answer

(3)
(Total 5 marks)

Q13. Brenda has 100 coloured beads.

27 are red.
41 are blue.
The rest are green.

She wants to make a necklace using all these beads.
She also wants to buy extra beads so she has the same number of each colour.
What is the least number of each colour she needs to buy?

.....
.....
.....
.....
.....
.....

Red

Blue

Green

(Total 4 marks)

Q14.

Here are five number cards.



(a) Use **three** of the cards to complete the following.

$$\square + \square \times \square = 9$$

(1)

(b) Use **four** of the cards to complete the following.
Card 3 has already been placed to help you.

$$\square \times 3 - \square \times \square = 7$$

(2)

(c) Use all five cards to complete the following.

$$\square + \square + \square = \square \square$$

(2)
(Total 5 marks)

Q15. $E = mv^2$

Work out the value of E when $m = 3$ and $v = 10$

.....

Answer

(Total 2 marks)