HIGHGATE

Mathematics
11+ Sample Paper B

Read each question carefully before attempting to answer it. Remember to show all your working clearly.

Write your answers in the boxes given.

If you cannot answer part of a question, move onto the next part. However, you must NOT turn to the next page until you are told to do so.

If you have finished a question spend any spare time checking your answers on that page: you will not be allowed to go back to that question later.

Do not worry if you find part of a question difficult: miss it out and try the next one.

The exam will last for approximately 45 minutes.

Question 1

Remember to include your working to show us how you find your answers.

Some animals are being sold at a pet shop.

a) Hamsters cost £7.50 each and gerbils cost £3.20 each.
Javier buys 4 hamsters and 3 gerbils.

How much did Javier spend in total?

Javier spends £ ____

b) Goldfish are kept in large tanks. Each tank can hold up to 13 fish.
There are 193 goldfish in the shop.

How many tanks are needed to hold all of these goldfish?

____ tanks are needed.

c) Chickens and chicks all have 2 wings. There are 8 chickens in the shop, and each of these 8 chickens has 5 chicks.

How many wings are there in total?

____ wings

d) 7 cat bowls cost the same as 4 dog leads.
3 cat bowls cost £72.

What does a dog lead cost?

A dog lead costs £

e) The shop has a sale on stick insects: "buy 3 stick insects and get a 4th stick insect free".

Ahmed paid £17.85 for 20 insects. What is the cost of 1 stick insect?

A stick insect costs £

WAIT: do NOT turn over until you are told to do so.
If you have time, check your answers on this page.

Question 2

Remember to include your working to show us how you find your answers.

a) In a charity fun run one sixth of the runners were adults, and the rest were children. There were 120 adults in the race. How many children were running the race?

children.

b) Tickets to enter a fairground cost £7.00 for adults and £3.00 for children. Once inside the fairground, each ride costs £3.00 for adults and £1.50 for children.
Joe and his 2 grandchildren, Amy and Peter, go to the fairground. Joe goes on 2 rides, and Peter goes on four times as many rides as Amy.
In total they spend £34.00 between them. How many rides did Peter go on?

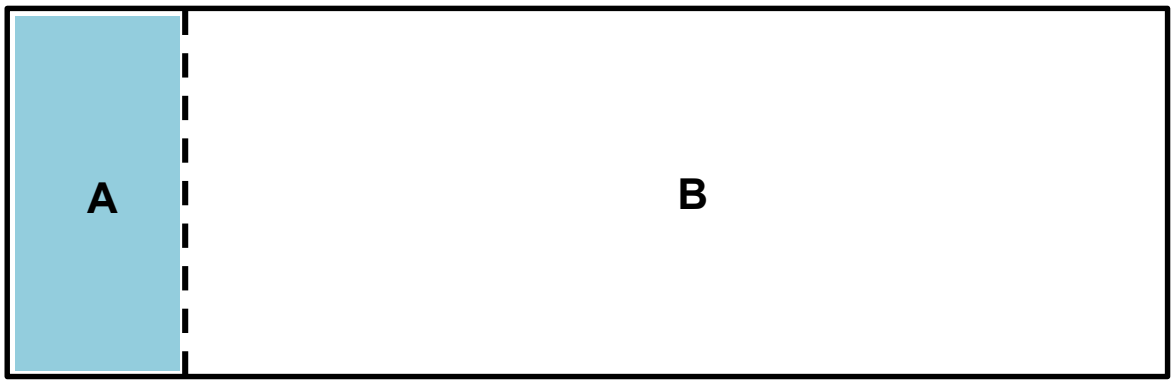
Peter goes on ☐ rides

c) A watch shop has a 2 day winter sale. On the first day, two thirds of all the watches are sold. On the second day, a quarter of the remaining watches are sold.

The shop sold 72 watches on the first day. How many watches were sold on the second day?

☐ watches

d) A rectangle is split into 2 smaller rectangles, labelled A and B. Rectangle A is shaded. One seventh of the original rectangle is shaded.



With scissors I cut off and remove a third of rectangle B. What fraction of the remaining shape is now shaded?

WAIT: do NOT turn over until you are told to do so.
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Question 3

Remember to include your working to show us how you find your answers.

a) A bag contains 600 sweets. Sweets are either red, blue or green. There are 8 more red sweets than blue sweets. 30% of the sweets are blue. How many sweets are green?

green sweets

b) In a sale, the price of a toy car is reduced by 40%.
I buy the toy car for £42. What did it cost before the sale?

£

c) Fido the Dog ate 16 pork sausages and 24 lamb sausages.
What percentage of Fido's sausages were lamb?

	%

d) Jack and Jill are buying chocolates in a Chocolate Shop.
Jack bought 6 chocolate frogs and 5 truffles for £9.55.
Jill bought 3 chocolate frogs and 3 truffles for £5.25.

How much does a chocolate frog cost, and how much does a truffle cost?

A chocolate frog costs [ ] , a truffle costs [ ]

e) An artist mixes red, yellow and white paint to create a new shade of orange.

Two fifths of the mixture is yellow paint.
The artist uses three times as much red paint as white paint.
In total, the artist mixes 180ml of orange paint.

How much red paint does the artist need?

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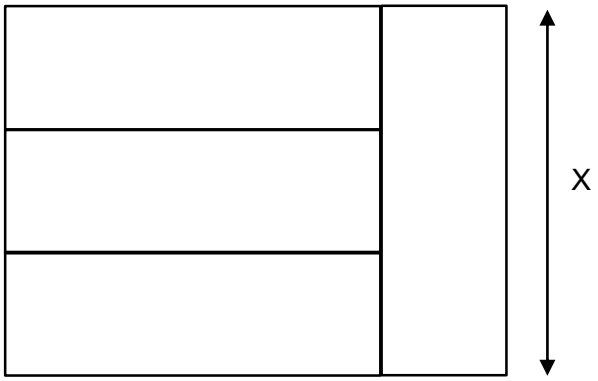
ml of red paint

Question 4

a) James has 15 sweets in his pocket. He has 7 red sweets, 6 blue sweets, and 2 pink sweets. Without looking, he removes some sweets from his pocket and places them on the table. What is the smallest number of sweets he should remove to **guarantee** that he has at least one sweet of each colour?

sweets

b) Four identical rectangles are joined together to form a larger rectangle, as shown below.



The area of the larger rectangle is 192cm^2.

Find the length of the side labelled X.

The length X is ____ cm

Remember to include your working to show us how you find your answers.

Karen wants to find the value of $1+2+3+4+5+6+7+8+9+10$. Rather than just doing the calculation, she notices that she can reorder the numbers in a clever way:
$1+10+2+9+3+8+4+7+5+6$. She does this because $1+10$, $2+9$, $3+8$ etc all add up to 11, and so her sum simplifies to $11+11+11+11+11$, which equals 55.

c) Using Karen's method, add up all of the whole numbers from 1 to 20.

d) Tina is an athlete, and she is completing a difficult training session. Her coach makes her run 5 metres forwards, then 5 metres back, then 10 metres forwards, then 10 metres

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back, then 15 metres forwards, 15 metres back, and this continues until she has run 100 metres forwards, then 100 metres back.

How far does Tina run in total?



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