R4a Fraction of an amount

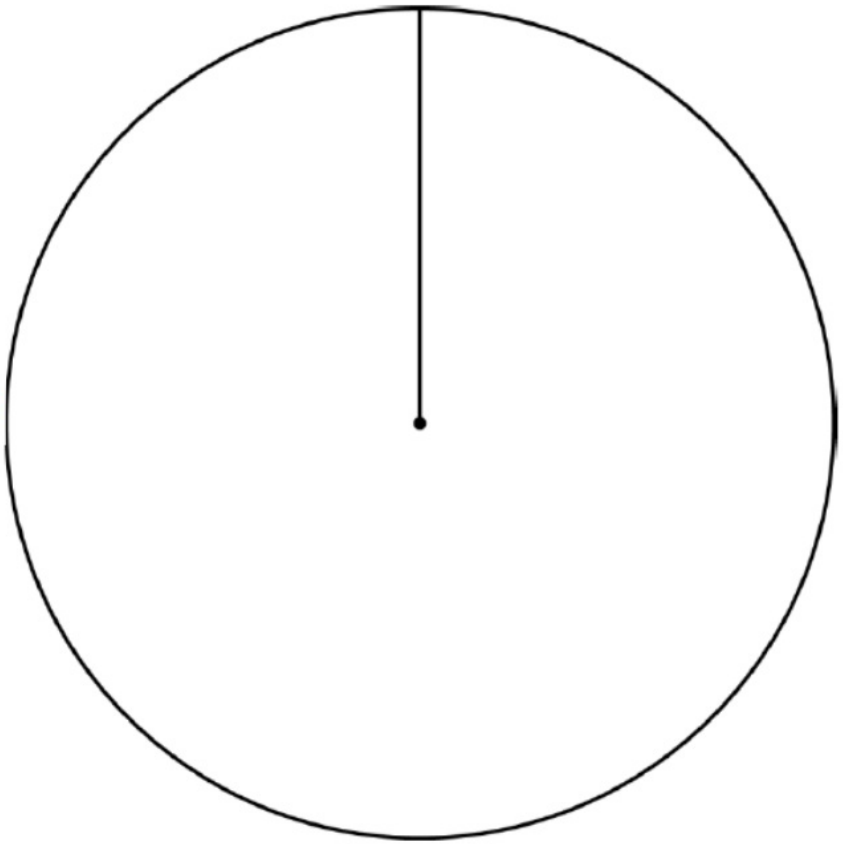
OCR

8 Sophia was asked how she spends her leisure time.

She replied

- I play football for $\frac{1}{4}$ of the time
- I meet with my friends for $\frac{2}{5}$ of the time
- I use my tablet for $\frac{3}{20}$ of the time
- I listen to music for the rest of the time.

(a) Complete the pie chart showing how Sophia spends her leisure time.



(b) What fraction of her leisure time does Sophia spend listening to music?

Created by W Neill

8 Sophia was asked how she spends her leisure time.

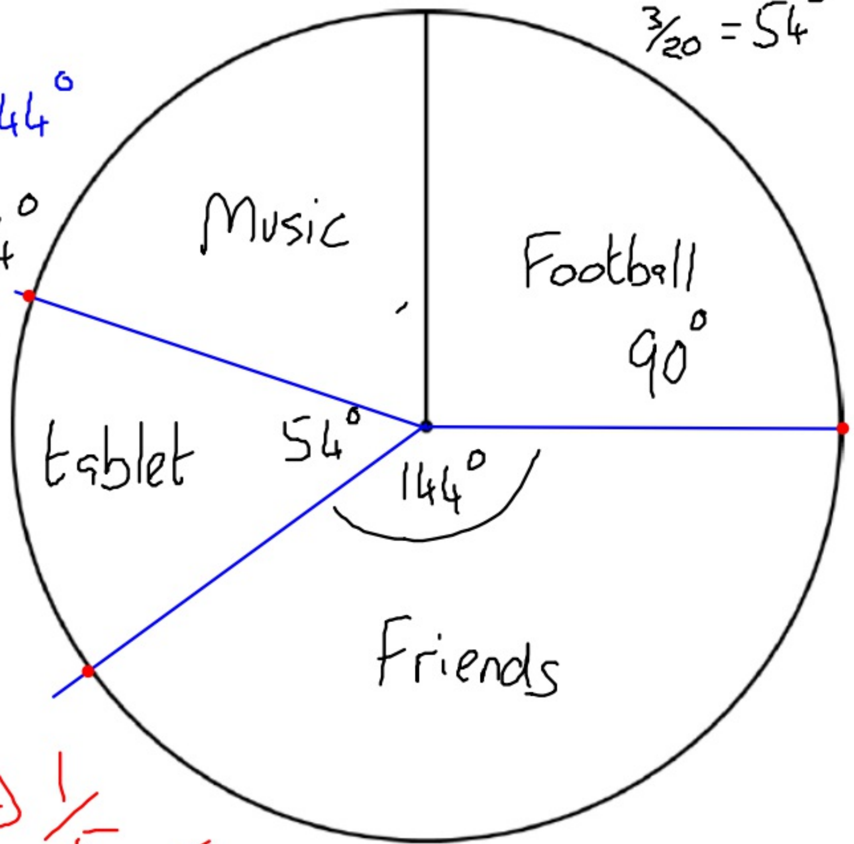
She replied

- I play football for $\frac{1}{4}$ of the time — $\frac{1}{4}$ of $360^\circ = 90^\circ$
- I meet with my friends for $\frac{2}{5}$ of the time — $\frac{2}{5}$ of $360^\circ = 144^\circ$
- I use my tablet for $\frac{3}{20}$ of the time — $\frac{3}{20}$ of $360^\circ = 54^\circ$
- I listen to music for the rest of the time. ↳ leave this as what is left over.

$360 \div 5 = 72$, $72 \times 2 = 144^\circ$

$\frac{1}{20} = 18^\circ$, $\frac{3}{20} = 54^\circ$

(a) Complete the pie chart showing how Sophia spends her leisure time.



(b) What fraction of her leisure time does Sophia spend listening to music?

$144 + 54 + 90 = 288$

$360 - 288 = 72$

$\frac{72}{360} = \frac{1}{5}$ ✓

(b) Boris wins £5000.

He gives $\frac{1}{5}$ of the money to his wife.

He gives 30% of the remaining money to his children.

What percentage of the **original** amount does Boris have left?

(b)..... % **[5]**

(b) Boris wins £5000.

He gives $\frac{1}{5}$ of the money to his wife.

He gives 30% of the remaining money to his children.

What percentage of the **original** amount does Boris have left?

Wife

$\frac{1}{5}$ of £5000 = £1000 ✓

Remaining = £4000 → 30% of £4000 = £1200

left £5000 − 1200 − 1000

= £2800

$\frac{2800}{5000}$

= 0·56

= 56%

(b) 56 % **[5]**

2 **(a)** Find $\frac{1}{7}$ of 56.

(a) ..... **[1]**

(b) Write 35 : 50 as a ratio in its simplest form.

(b) ..... : ..... **[1]**

(c) Write 8 mm to 12 cm as a ratio in its simplest form.

(c) ..... : ..... **[2]**

2 **(a)** Find $\frac{1}{7}$ of 56.

8

(a) ..... **[1]**

(b) Write 35 : 50 as a ratio in its simplest form.

(5)

35 : 50

7 : 10

(b) 7 : 10 **[1]**

(c) Write 8 mm to 12 cm as a ratio in its simplest form.

1cm = 10mm

8mm : 120mm

4 : 60

2 : 30

1 : 15

(c) 1 : 15 **[2]**

(c) Work out. $\frac{5}{8}$ of 90

(c) ..... **[2]**

(d) Write 0.000 083 in standard form.

(d) ..... **[1]**

(c) Work out.

$\frac{5}{8}$ of 90

(c) 56.25 ..... **[2]**

(d) Write 0.000 083 in standard form.

(d) 8.3×10^{-5} ..... **[1]**

12 **(a)** Three schools provide this information.

- $\frac{3}{7}$ of the pupils at Harwood are girls.
- 42% of the pupils at Crompton are girls.
- The ratio of girls to boys at Astley is 4 : 5.

Write the schools in the order of their proportion of girls, lowest to highest.
Show how you reached your answer.

(a) .... **[4]**

lowest

12 (a) Three schools provide this information.

- $\frac{3}{7}$ of the pupils at Harwood are girls.
- 42% of the pupils at Crompton are girls.
- The ratio of girls to boys at Astley is 4 : 5.

Write the schools in the order of their proportion of girls, lowest to highest.
Show how you reached your answer.

Harwood

3/7

0·428

Crompton

42%

0·42

Astley

4/9

0·444...

(a) Crompton ..... Harwood ..... Astley ..... **[4]**

lowest

Video created by W Neill

4 Karen made 40 cakes.

She gives $\frac{1}{5}$ of the cakes to Andrew.

She gives 10% of the 40 cakes to Chris.

What fraction of the 40 cakes does she have left?

..... **[3]**

Video created by W Neill

4 Karen made 40 cakes.

She gives $\frac{1}{5}$ of the cakes to Andrew.

She gives 10% of the 40 cakes to Chris.

What fraction of the 40 cakes does she have left?

40 - 12 = 28

Andrew $\frac{1}{5}$ of 40 = 8

Chris 10% of 40 = 4

12

✓

$\frac{28}{40} = \frac{14}{20} = \frac{7}{10}$

..... **[3]**

Video created by W Neill

2 **(a)** Work out.

(i) $6\frac{1}{2}+\frac{3}{4}$

(a)(i) ..... **[1]**

(ii) $\frac{4}{7}$ of 63

(ii) ..... **[2]**

Video created by W Neill

2 **(a)** Work out.

(i) $6\frac{1}{2}+\frac{3}{4}$

$6\frac{2}{4}+\frac{3}{4}$

$\frac{5}{4}=1\frac{1}{4}$

$7\frac{1}{4}$

(a)(i) ..... **[1]**

(ii) $\frac{4}{7}$ of 63

÷ by den, then times by num

$63 \div 7 = 9$

9×4

36

(ii) ..... **[2]**

Video created by W Neill

7 There are **20 coins** in a pot.
The coins are 1p, 2p, 5p and 10p.

A coin is taken at random from the pot.

- The probability that it is a 1p coin is $\frac{3}{10}$.
- The probability that it is a 2p coin is $\frac{2}{5}$.

The total value of the coins in the pot is 57 pence.

Work out how many of each type of coin there are in the pot.

1p ..... , 2p ..... , 5p ..... , 10p ..... **[4]**

7 There are **20 coins** in a pot.
The coins are 1p, 2p, 5p and 10p.

Video created by W Neill

20 coins

A coin is taken at random from the pot.

- The probability that it is a 1p coin is $\frac{3}{10}$. 3/10 of 20 coins = 6 × 1p coins ✓
- The probability that it is a 2p coin is $\frac{2}{5}$. 2/5 of 20 coins = 8 × 2p coins ✓

The total value of the coins in the pot is 57 pence. 57p

57p − 22p = 35p

Work out how many of each type of coin there are in the pot.

22p

6p ← 16p

35p → 6 coins

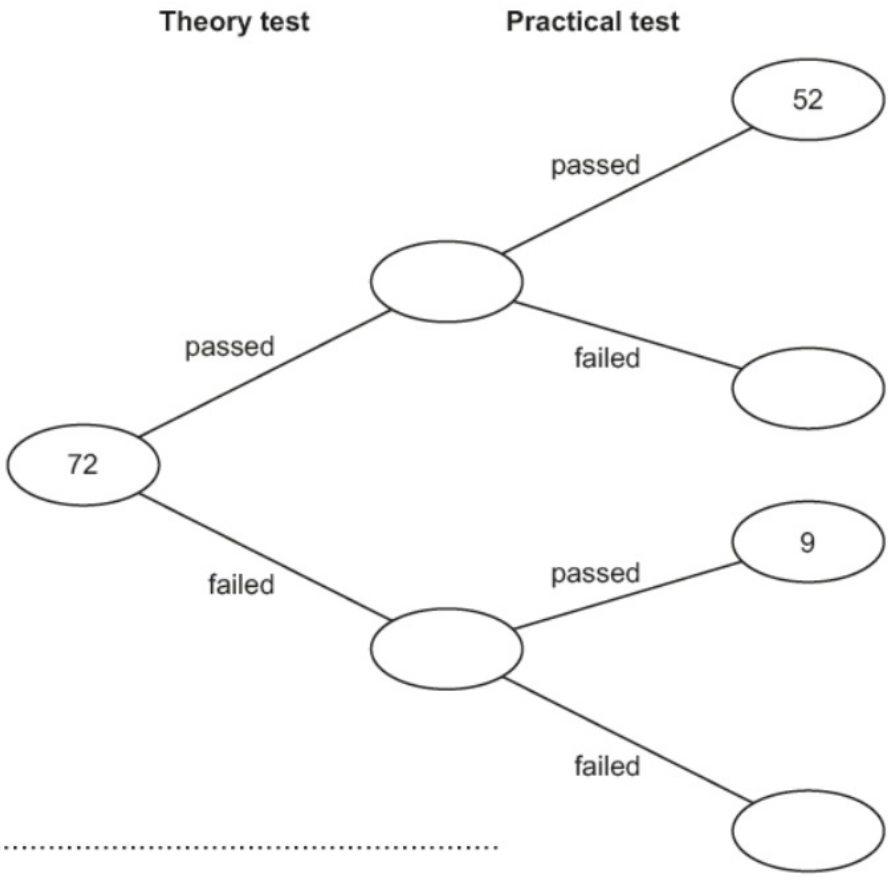
5 × 5p, 1 × 10p

1p ..6.. , 2p ..8.. , 5p ..5.. , 10p ..1.. **[4]**

Created by W Neill

8 72 students each took a theory test followed by a practical test.
They either passed or failed each test.

This frequency tree shows some of the results.



(a) How many students passed both tests?

(b) $\frac{5}{6}$ of the 72 students passed the theory test.

Complete the frequency tree.

(c) Which test was passed by more students?
Explain your reasoning.

..... because .....

.....

..... **[3]**

Created by W Neill

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They either passed or failed each test.

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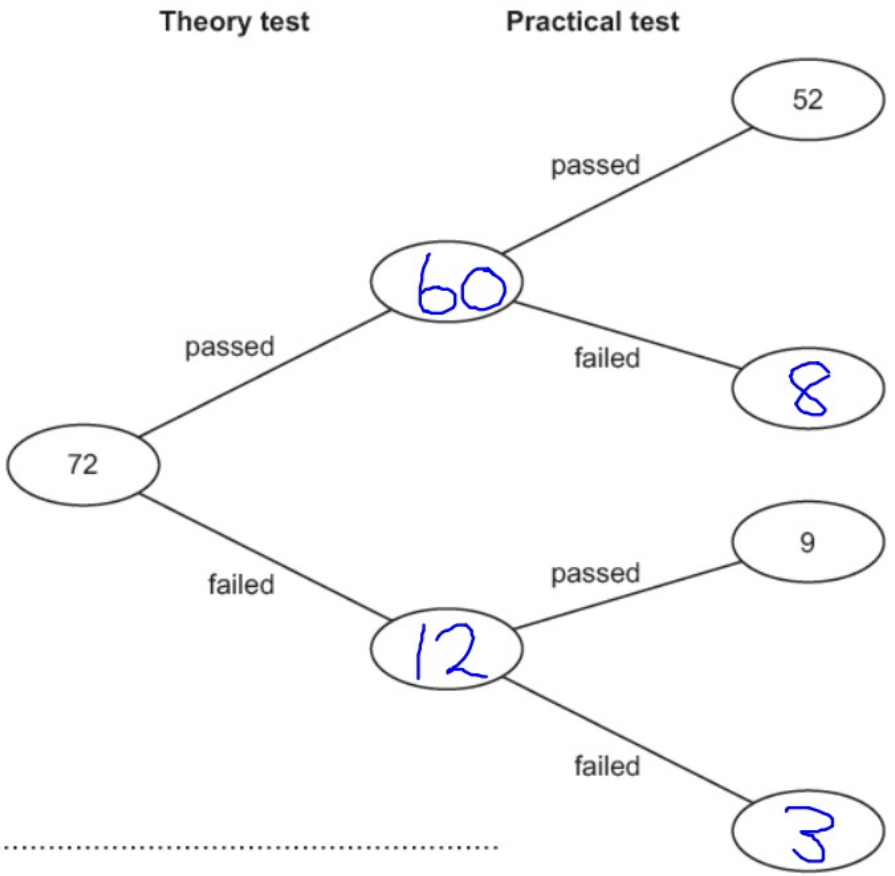


(a) How many students passed both tests?

52 ✓

(b) $\frac{5}{6}$ of the 72 students passed the theory test.

Complete the frequency tree.

5/6 of 72 = 60 passed theory

(c) Which test was passed by more students?
Explain your reasoning.

Theory = 60/72 ..... because .....

.....

Practical = 61/72 Practical was passed by more as 61/72 > 60/72 [3]

Created by W Neill

3 **(a)** Write 48 as a percentage of 200.

(a) ..... % **[1]**

(b) Work out $\frac{1}{4}$ of 80.

(b) ..... **[1]**

Created by W Neill

3 **(a)** Write 48 as a percentage of 200.

R5

$\frac{48}{200} \xrightarrow{\div 2} \frac{24}{100} = 24\%$

(a) 24 % **[1]**

(b) Work out $\frac{1}{4}$ of 80.

R4a

$\frac{1}{4}$ of $\times$ 80

(b) 20 ✓ **[1]**

Video created by W Neill

6 500 people are asked if they drink coffee.

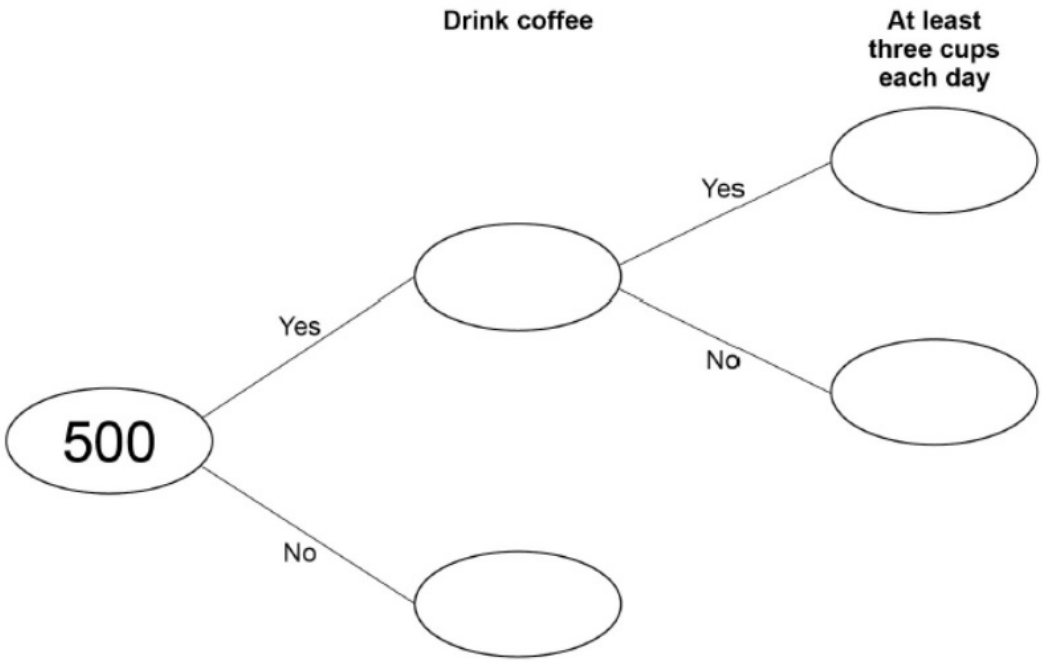
$\frac{9}{10}$ say Yes.

20% of the people who say Yes drink at least three cups each day.

6 (a) Complete the frequency tree.

[4 marks]

AQa
R7
P30

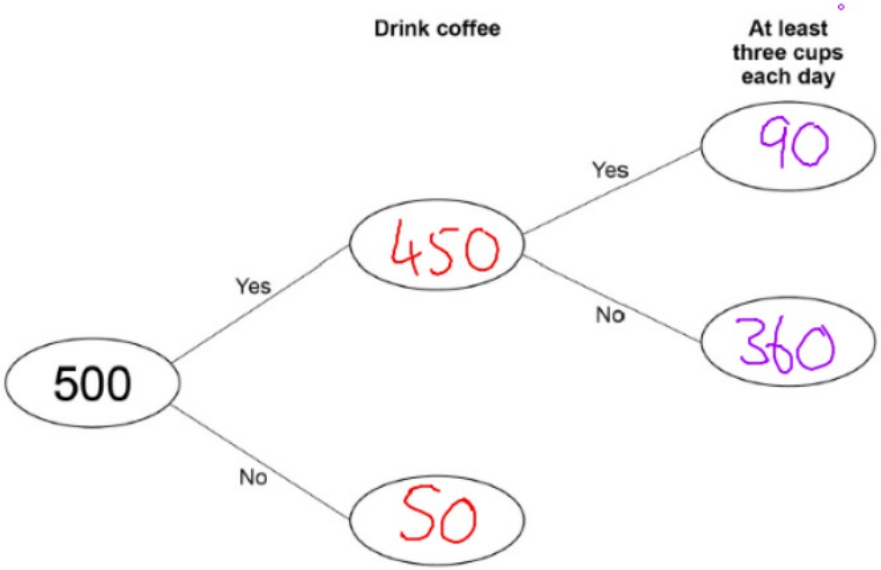


Video created by W Neill

6 (b) What fraction of the 500 people drink at least three cups of coffee each day?

N33 Give your answer in its simplest form.

[2 marks]



$\frac{90}{500} = \frac{9}{50}$

Answer $\frac{9}{50}$

Video created by W Neill

11 (b) A different pack has 72 cards.

R4a

$\frac{5}{9}$ are yellow.

Work out the number of yellow cards.

[2 marks]

Answer _____

Video created by W Neill

11 (b) A different pack has 72 cards.

R4a

$\frac{5}{9}$ are yellow.

Work out the number of yellow cards.

[2 marks]

5/9 of 72

÷ by den

x by num

72 ÷ 9 = 8

8 x 5

Answer 40 ✓

Video created by W Neill

4 In a school, $\frac{2}{3}$ of the students study a language.

Of those students who study a language, $\frac{2}{5}$ study Spanish.

Find the ratio of students who study Spanish to students who do not study Spanish.

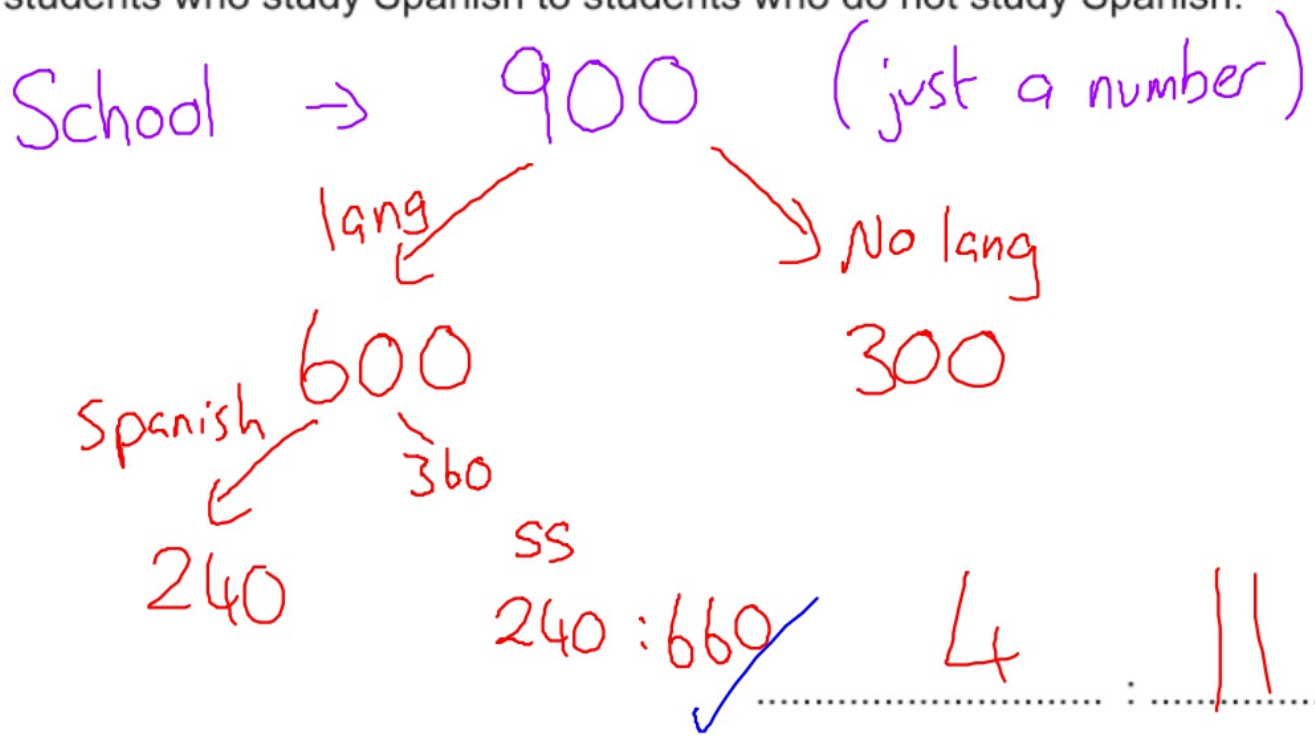
..... : ..... **[3]**

Video created by W Neill

4 In a school, $\frac{2}{3}$ of the students study a language.

R4a
R13 Of those students who study a language, $\frac{2}{5}$ study Spanish.

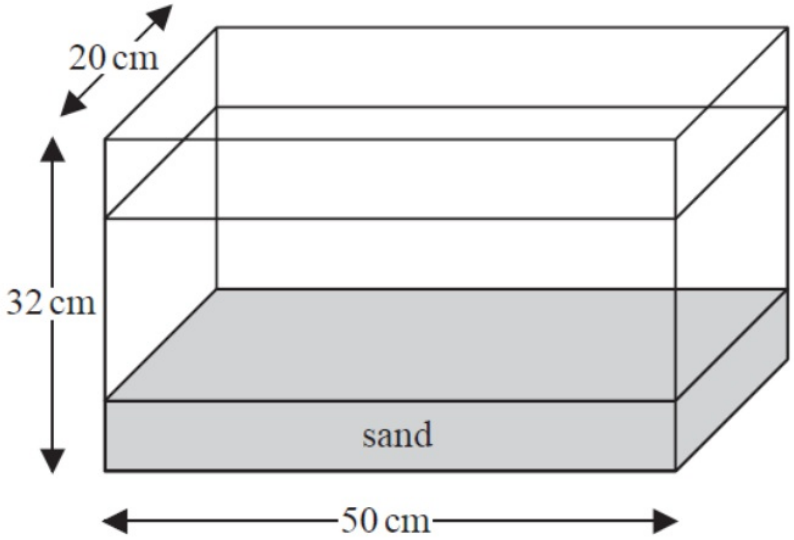
Find the ratio of students who study Spanish to students who do not study Spanish.



..... : ..... **[3]**

Edexcel

21 The diagram shows a fish tank in the shape of a cuboid.



The dimensions of the tank are 50 cm by 32 cm by 20 cm.

The tank is $\frac{3}{4}$ full of water and sand.

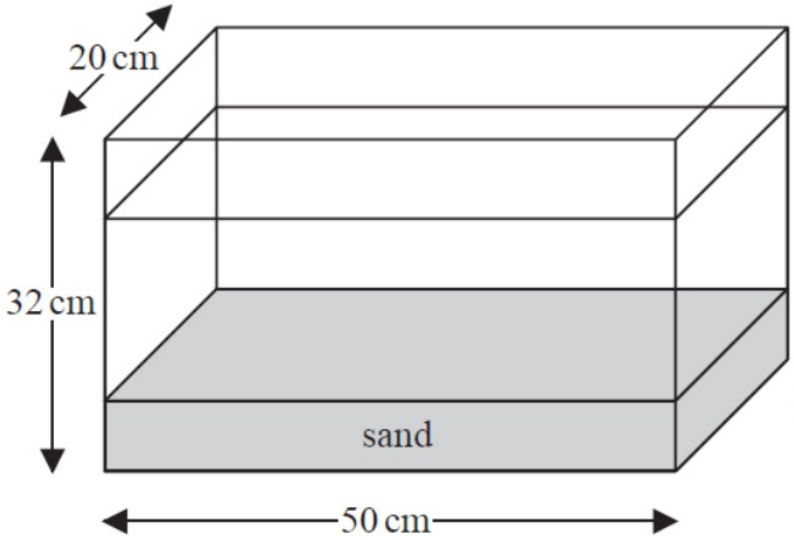
The ratio of the volume of water to the volume of sand is 5 : 1

Work out the number of litres of water in the tank.
You must show all your working.

..... litres

(Total for Question 21 is 5 marks)

21 The diagram shows a fish tank in the shape of a cuboid.



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The tank is $\frac{3}{4}$ full of water and sand.

The ratio of the volume of water to the volume of sand is 5 : 1

Work out the number of litres of water in the tank.
You must show all your working.

Volume of cuboid

$50 \times 20 \times 32 = 1000 \times 32$

$= 32000 cm^3$

$\frac{3}{4}$ of $32000 cm^3 = 24000 cm^3$

÷4 ×3

Water : Sand

5 : 1

24000 ÷6

= 4000 × 5 ... $20000 cm^3$ ← water

4000 × 1 = $4000 cm^3$

$1000 cm^3 = 1$ Litre

$20,000 cm^3 =$ 20 litres

(Total for Question is 5 marks)

7 Mary, Bianka and Steve are picking apples.

Mary picks 264 apples.

$\frac{1}{6}$ of these apples are green.

Bianka picks 150 apples.
28% of these apples are green.

Steve picks 340 apples.
15% of these apples are green.

Who picks the most green apples?
You must show all of your working.

(Total for Question 7 is 4 marks)

Created by W Neill

7 Mary, Bianka and Steve are picking apples.

Mary picks 264 apples.
$\frac{1}{6}$ of these apples are green.

1/6 of 264 = 44

Bianka picks 150 apples.
28% of these apples are green.

28% of 150 = 42

Steve picks 340 apples.
15% of these apples are green.

15% of 340 = 51

Who picks the most green apples?
You must show all of your working.

Steve collects most green apples ✓

(Total for Question 7 is 4 marks)

Video created by W Neill

4 Work out $\frac{1}{7}$ of 35

R4a

.....

(Total for Question 4 is 1 mark)

Video created by W Neill

4 Work out $\frac{1}{7}$ of 35

R4a

$\frac{1}{7} \times 35$

5

5

$7\overline{)35}$ ✓

(Total for Question 4 is 1 mark)

Video created by W Neill

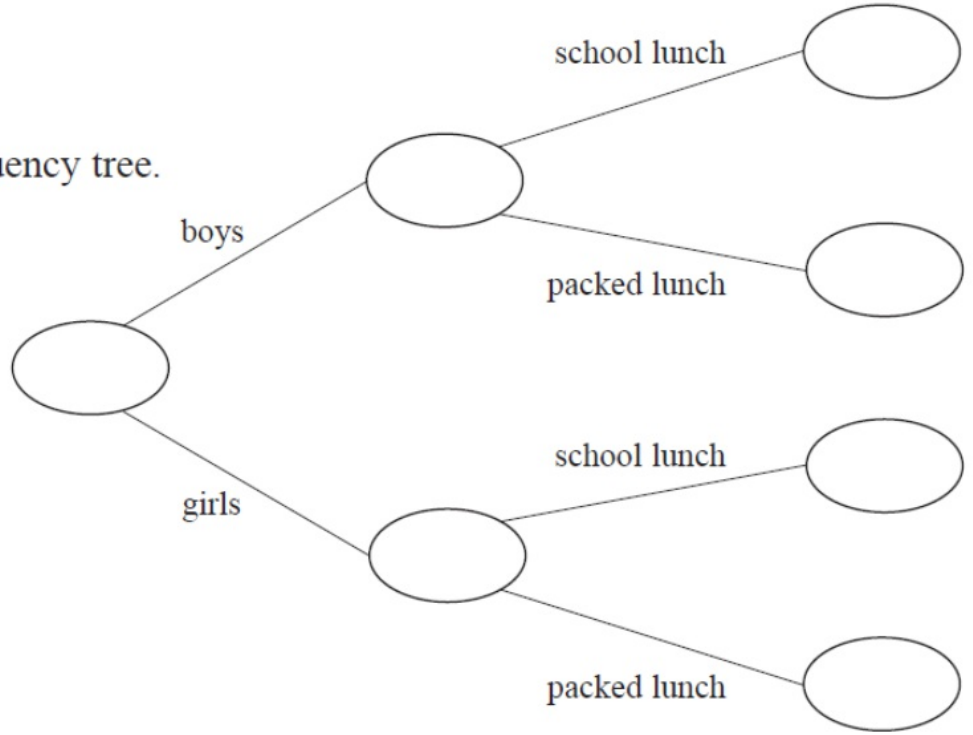
16 There are 60 children in Year 6
Each of these children has either a school lunch or a packed lunch.

P30 32 of the children are boys.

R4a $\frac{3}{4}$ of the boys have a school lunch.

$\frac{1}{2}$ of the girls have a packed lunch.

Use this information to complete the frequency tree.



(Total for Question 16 is 4 marks)

Video created by W Neill

16 There are 60 children in Year 6
Each of these children has either a school lunch or a packed lunch.

P30 32 of the children are boys. ✓

R4a $\frac{3}{4}$ of the boys have a school lunch.

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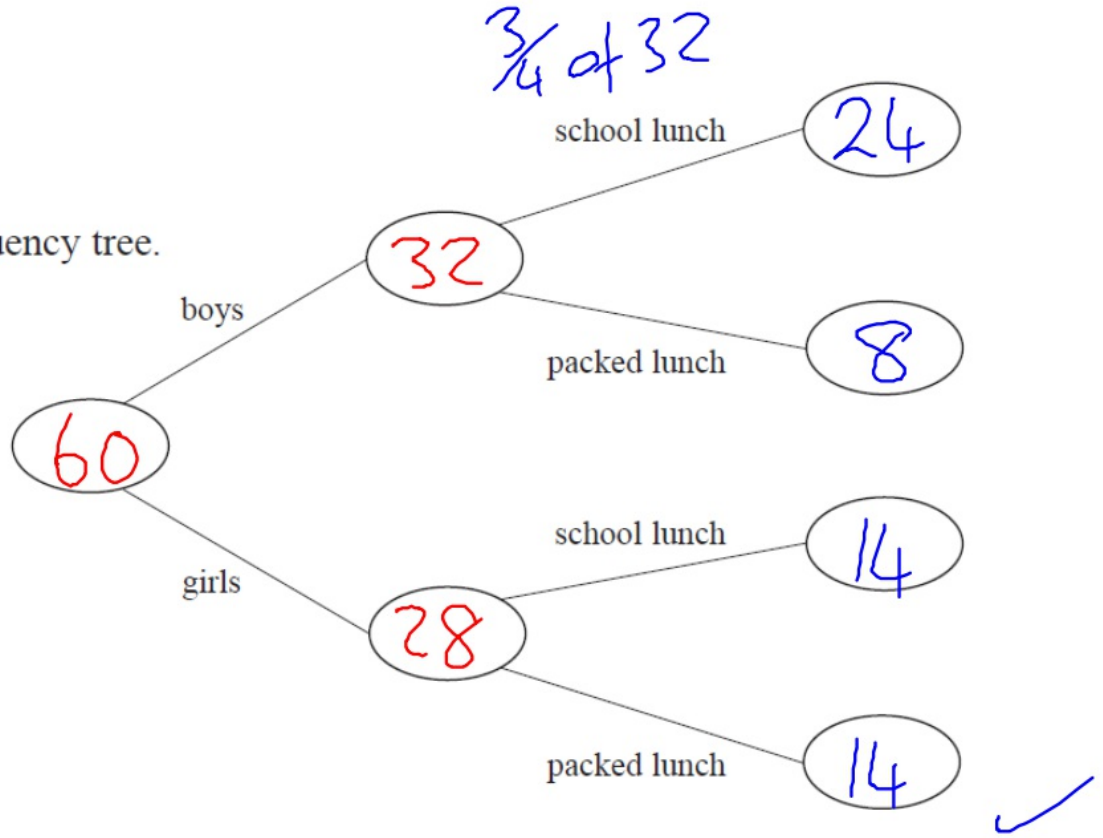
Use this information to complete the frequency tree.



✓

(Total for Question 16 is 4 marks)

Video created by W Neill

9 Sean works for a company.
His normal rate of pay is £12 per hour.

When Sean works more than 8 hours a day, he is paid overtime for each hour he works more than 8 hours.

Sean's rate of overtime pay per hour is $1\frac{1}{4}$ times his normal rate of pay per hour.

On Monday Sean worked for 10 hours.

Work out the total amount of money Sean earned on Monday.

Video created by W Neill

9 Sean works for a company.
His normal rate of pay is £12 per hour.

When Sean works more than 8 hours a day, he is paid overtime for each hour he works more than 8 hours.

Sean's rate of overtime pay per hour is $1\frac{1}{4}$ times his normal rate of pay per hour.

On Monday Sean worked for 10 hours.

Work out the total amount of money Sean earned on Monday.

8 hours

£12 x 8 = £96

Overtime

2hrs

£12

1 1/4

£12

£3

= £15

2hrs x £15

= £30

96

30

£126

Video created by W Neill

6 There are 495 coins in a bottle.

$\frac{1}{3}$ of the coins are £1 coins.

124 of the coins are 50p coins.
The rest of the coins are 20p coins.

Work out the total value of the 495 coins.

£.....

(Total for Question 6 is 4 marks)

Video created by W Neill

6 There are 495 coins in a bottle.

$\frac{1}{3}$ of the coins are £1 coins.

124 of the coins are 50p coins.

The rest of the coins are 20p coins.

Work out the total value of the 495 coins.

£1

$\frac{1}{3}$ of 495 = 165 coins

£165

50p

124 × £0·50

£62

Rest

495 − 165 − 124 = 206

206 × £0·20

= £41·20

£ 268·20

(Total for Question 6 is 4 marks)

Video created by W Neill

18 On Saturday, some adults and some children were in a theatre.
The ratio of the number of adults to the number of children was 5 : 2

Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$ of the children had seats in the Stalls.
117 children had seats in the Circle.

There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?
You must show how you get your answer.

Video created by W Neill

18 On Saturday, some adults and some children were in a theatre.
The ratio of the number of adults to the number of children was 5 : 2

Each person had a seat in the Circle or had a seat in the Stalls.

$\frac{3}{4}$ of the children had seats in the Stalls.

117 children had seats in the Circle.

There are exactly 2600 seats in the theatre.

On this Saturday, were there people on more than 60% of the seats?
You must show how you get your answer.

Children

3/4 Stalls

1/4 Circle (117)

1/4 = 117 ×3

3/4 = 351 ×3

Children = 468 ✓

468 = 2part
234 = 1part
1170 = 5parts

Adults	:	Children
5	:	2
1170	:	468 ✓

Total = 1638 people

1638 people in theatre.

$\frac{1638}{2600} = 0.63$

63% full

Yes, more than 60% of seats were full.

Video created by W Neill

18 Daniel bakes 420 cakes.
He bakes only vanilla cakes, banana cakes, lemon cakes and chocolate cakes.

$\frac{2}{7}$ of the cakes are vanilla cakes.

35% of the cakes are banana cakes.

The ratio of the number of lemon cakes to the number of chocolate cakes is 4 : 5

Work out the number of lemon cakes Daniel bakes.

Video created by W Neill

18 Daniel bakes 420 cakes.
He bakes only vanilla cakes, banana cakes, lemon cakes and chocolate cakes.

$\frac{2}{7}$ of the cakes are vanilla cakes.

35% of the cakes are banana cakes.
The ratio of the number of lemon cakes to the number of chocolate cakes is 4 : 5

Work out the number of lemon cakes Daniel bakes.

Vanilla
$\frac{2}{7}$ of 420 = 120

lemon and choc 420 − 120 − 147 = 153

153 (L : C = 4 : 5)

banana
35% of 420 = 147

153 = 9 parts
÷9 ↓ ↑ ×4
17 = 1 part
×4 ↓ ↑ ×4
68 4 parts

68 ✓

10 Jim thinks of a number.

$\frac{2}{3}$ of Jim's number is 48

Work out $\frac{5}{6}$ of Jim's number.

.....

(Total for Question 10 is 2 marks)

Created by W Neill

10 Jim thinks of a number.

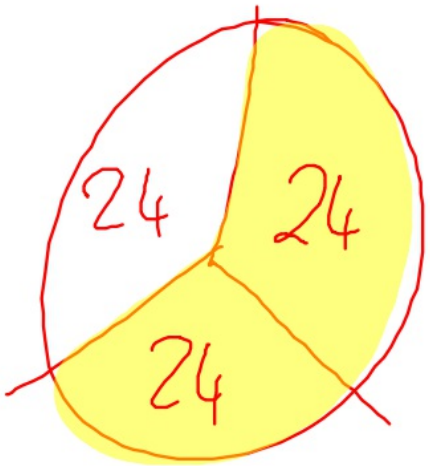
$\frac{2}{3}$ of Jim's number is 48

Work out $\frac{5}{6}$ of Jim's number.

Jim's number = 72

5/6 of 72 = 60

2/3 is 48



2/3 = 48

1/3 = 24

24x3 = 72

60 ✓

(Total for Question 10 is 2 marks)

Video created by W Neill

16 Alan, Bispah and Chan share a sum of money.

R4a Alan gets $\frac{1}{8}$ of the money.

R4b Bispah gets $\frac{1}{2}$ of the money.

Chan gets the rest of the money.

Alan gets £2.50

(a) Work out how much money Bispah gets.

£.....

(2)

(b) Find the ratio

amount of money Alan gets : amount of money Chan gets

R13 Give your answer in the form $a : b$ where a and b are whole numbers.

.....

(3)

Video created by W Neill

16 Alan, Bispah and Chan share a sum of money.

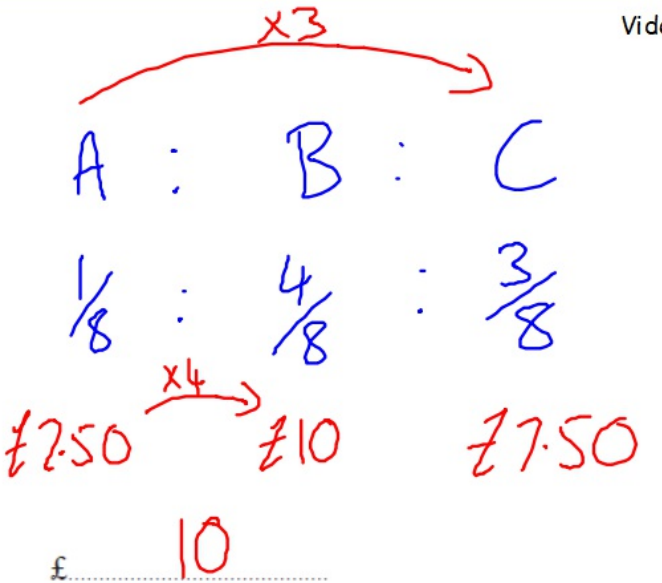
R4a Alan gets $\frac{1}{8}$ of the money.

R4b Bispah gets $\frac{1}{2}$ of the money.

Chan gets the rest of the money.

Alan gets £2.50

(a) Work out how much money Bispah gets.



1/2 = 4/8

£ 10

(2)

(b) Find the ratio

amount of money Alan gets : amount of money Chan gets

R13 Give your answer in the form $a : b$ where a and b are whole numbers.

2.50 : 7.50

1 : 3 ✓

(3)

Video Created by W Neill

6 Sue has 2 cats.

R4a Each cat eats $\frac{1}{4}$ of a tin of cat food each day.
R26

Sue buys 8 tins of cat food.

Has Sue bought enough cat food to feed her 2 cats for 14 days?
You must show how you get your answer.

(Total for Question 6 is 3 marks)

Video Created by W Neill

6 Sue has 2 cats.

R4a R26 Each cat eats $\frac{1}{4}$ of a tin of cat food each day.

Sue buys 8 tins of cat food.

Has Sue bought enough cat food to feed her 2 cats for 14 days?
You must show how you get your answer.

2 cats ... 1/4 tin each

→ 1/4 + 1/4 = 1/2 tin each day

1 tin last 2 days

→ 1 tin = 2 days

8 tins = 16 days

Yes, Sue has bought enough for 14 days ✓

(Total for Question 6 is 3 marks)

Video Created by W Neill

4 Work out $\frac{1}{8}$ of 720

R4a

.....

(Total for Question 4 is 1 mark)

Video Created by W Neill

4 Work out $\frac{1}{8}$ of 720

R4a

90

(Total for Question 4 is 1 mark)

AQA

Video created by W Neill

10 The average age of teachers at a school is 36 years.

R4a

Mr Smith's age is $\frac{11}{9}$ of the average.

How old is Mr Smith?

[2 marks]

Answer _____ years

Video created by W Neill

10 The average age of teachers at a school is 36 years.

R4a

Mr Smith's age is $\frac{11}{9}$ of the average.

How old is Mr Smith?

11/9 of 36 years

[2 marks]

36 ÷ 9 x 11

4 x 11 = 44

Answer 44 years

✓

Video created by W Neill

25 There are 720 boys and 700 girls in a school.

The probability that a boy chosen at random studies French is $\frac{2}{3}$

The probability that a girl chosen at random studies French is $\frac{3}{5}$

25 (a) Work out the number of students in the school who study French.

[3 marks]

R4a

Answer _____

Video created by W Neill

There are 720 boys and 700 girls in a school.

1420

The probability that a boy chosen at random studies French is $\frac{2}{3}$

The probability that a girl chosen at random studies French is $\frac{3}{5}$

(a) Work out the number of students in the school who study French.

[3 marks]

R4a

720 boys $\frac{2}{3}$ of 720 = 480 boys

700 girls = $\frac{3}{5}$ of 700 = 420 girls

480 + 420

900 pupils

Answer 900 pupils

Video created by W Neill

11 A fair spinner has 12 equal sections.

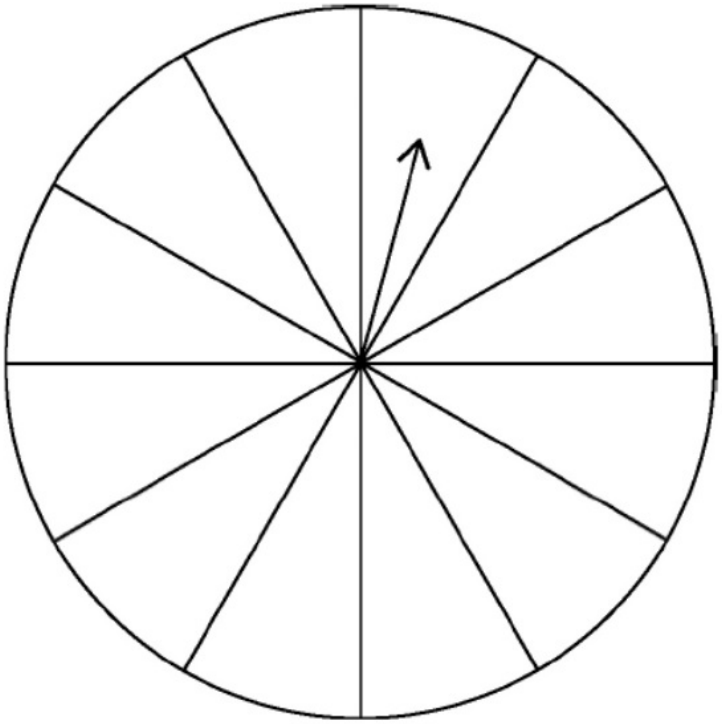
Label each section A, B, C or D so that when the arrow is spun,

P21 the probability it lands on A is $\frac{1}{6}$

P26 the probability it lands on B is **equal** to the probability it lands on C

R4a the probability it lands on D is **double** the probability it lands on A.

[3 marks]



Video created by W Neill

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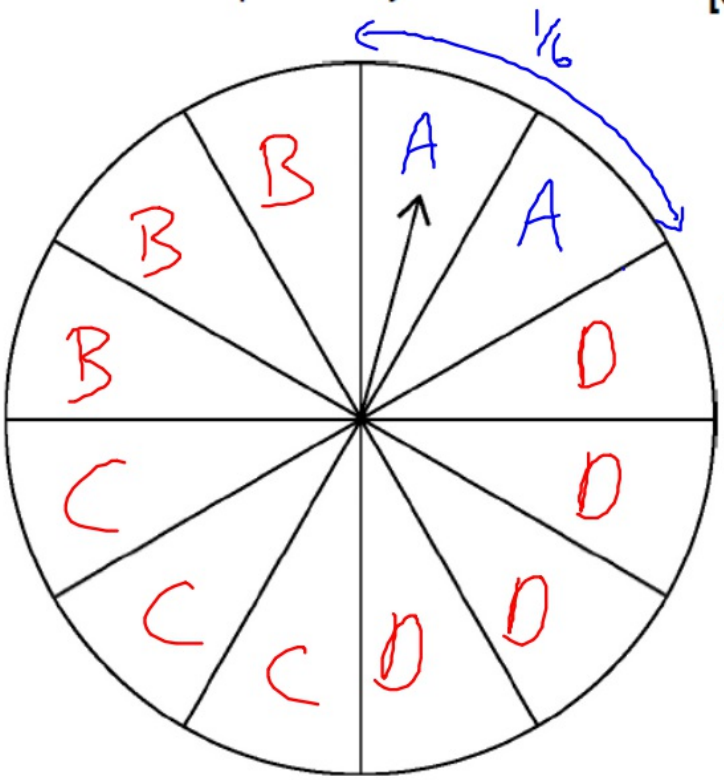
P21 the probability it lands on A is $\frac{1}{6}$

P26 the probability it lands on B is **equal** to the probability it lands on C

R4a the probability it lands on D is **double** the probability it lands on A.

[3 marks]



1/6 of 12 sections

= 2 = A

sections 4 = D

✓

Video created by W Neill

16 A train has 1 first-class carriage and 6 standard carriages.

R4a

The first-class carriage has 64 seats.

$\frac{3}{8}$ are being used.

Each standard carriage has 78 seats.

$\frac{7}{13}$ in each carriage are being used.

Are **more than** half the seats on the train being used?

You **must** show your working.

[5 marks]

Answer _____

Video created by W Neill

16 A train has 1 first-class carriage and 6 standard carriages.

R4a

1 x The first-class carriage has 64 seats.

$\frac{3}{8}$ are being used.

6x Each standard carriage has 78 seats.

$\frac{7}{13}$ in each carriage are being used.

Are **more than** half the seats on the train being used?

You **must** show your working.

Total seats

64 + (6 x 78)

= 532 seats in total

In use $\frac{3}{8}$ of 64 = 24

$\frac{7}{13}$ of 78 = 42 x 6

= 252

In use 252 + 24 = 276

In use = 276

½ of 532 = 266

Yes, 10 more are in use ✓

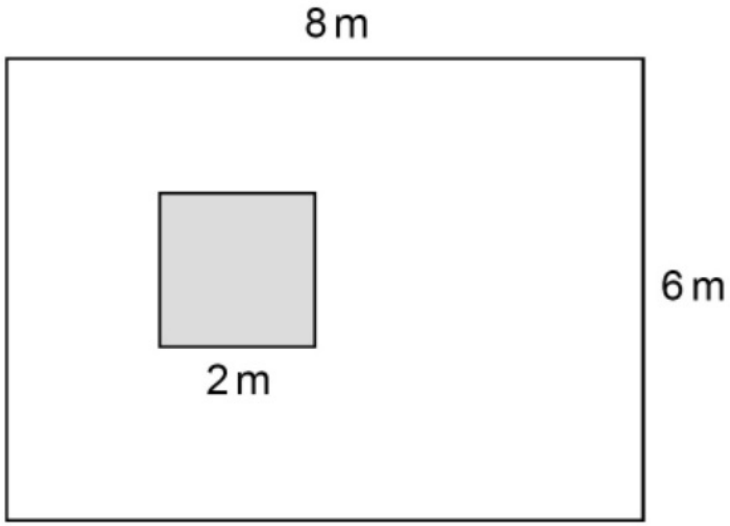
Answer _____

Video created by W Neill

7 A rectangular carpet measures 8 m by 6 m

Part of the carpet is covered by a square rug of length 2 m

R4a
G17



Not drawn accurately

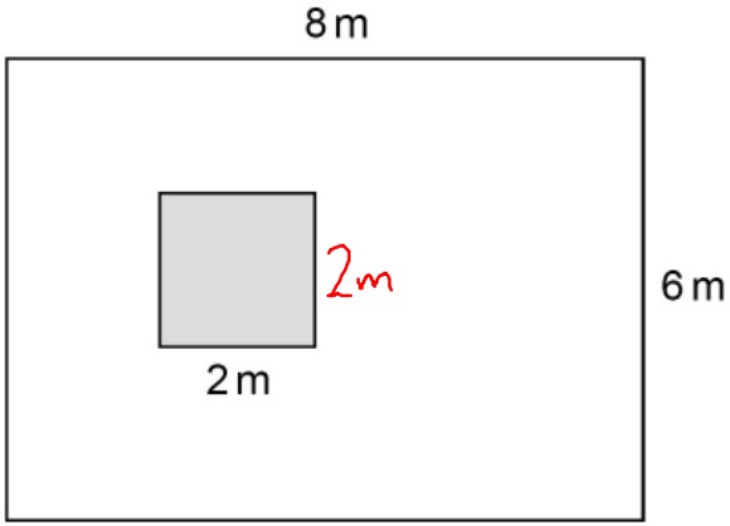
Show that $\frac{1}{12}$ of the carpet is covered by the rug. **[2 marks]**

Video created by W Neill

7 A rectangular carpet measures 8 m by 6 m

Part of the carpet is covered by a square rug of length 2 m

R4a
G17



Not drawn accurately

Carpet = 8m x 6m
= $48m^2$

Rug = 2m x 2m
= $4m^2$

These are equal

Show that $\frac{1}{12}$ of the carpet is covered by the rug. **[2 marks]**

$\frac{1}{12}$ of carpet = $\frac{1}{12}$ of $48m^2$ = $\frac{48}{12}$ = $4m^2$

Video created by W Neill

22 Anna plays a computer game.

Each game is a win or a loss.

R4a She wins three quarters of her first 24 games.

R13 She then wins her next 12 games.

For all 36 games, work out the ratio wins : losses

Give your answer in its simplest form.

[3 marks]

Answer _____ : _____

Video created by W Neill

22 Anna plays a computer game.

Each game is a win or a loss.

R4a She wins three quarters of her first 24 games.

R13 She then wins her next 12 games.

For all 36 games, work out the ratio wins : losses

Give your answer in its simplest form.

[3 marks]

Plays 36

Wins $\frac{3}{4}$ of 24

$\frac{24}{4} = 6 \times 3 = 18$

$18 + 12$ ✓

30 wins

wins : losses

30 : 6

5 : 1 2 : 6

Answer 5 : 1

Video created by W Neill

17 (b) Laura also wants to work out $\frac{30}{29}$ of 60

R4a

Her answer is 58

Is her answer correct?

Tick a box.

☐ Yes ☐ No

Give a reason for your answer.

[1 mark]

_____

_____

Video created by W Neill

17 (b) Laura also wants to work out $\frac{30}{29}$ of 60

R4a

Her answer is 58

Is her answer correct?

Tick a box.

☐ Yes ☑ No

Give a reason for your answer.

[1 mark]

She has found $\frac{29}{30}$ of 60 eg it should be ÷ by den and x by num

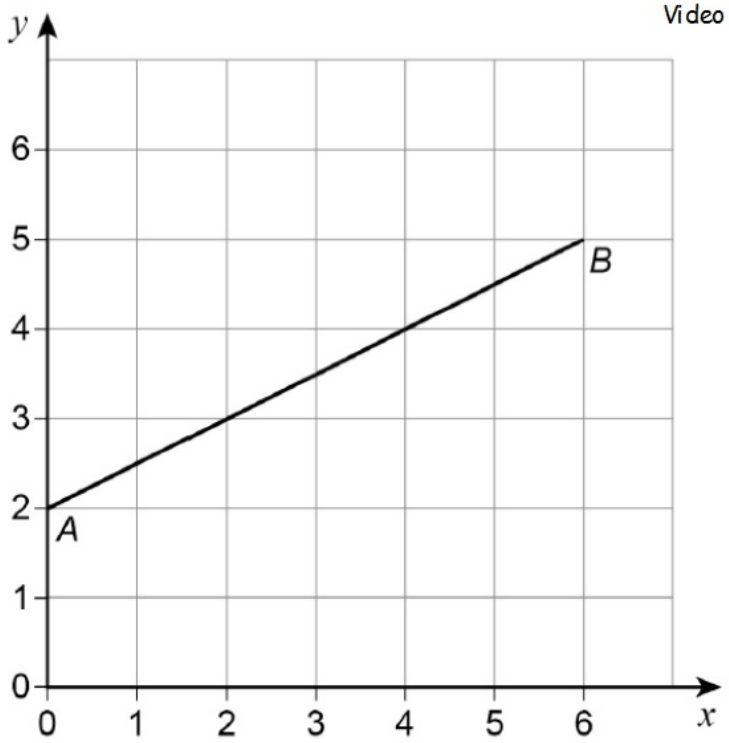
Laura has done it the wrong way round.

Video created by W Neill

7 Line AB is shown on the grid.

A is the point (0, 2)

B is the point (6, 5)



7 (c) On the grid, draw a line from point (0, 0) that is

parallel to AB

and

two thirds as long as AB. **[2 marks]**

R4a

Video created by W Neill

7 Line AB is shown on the grid.

A is the point (0, 2)

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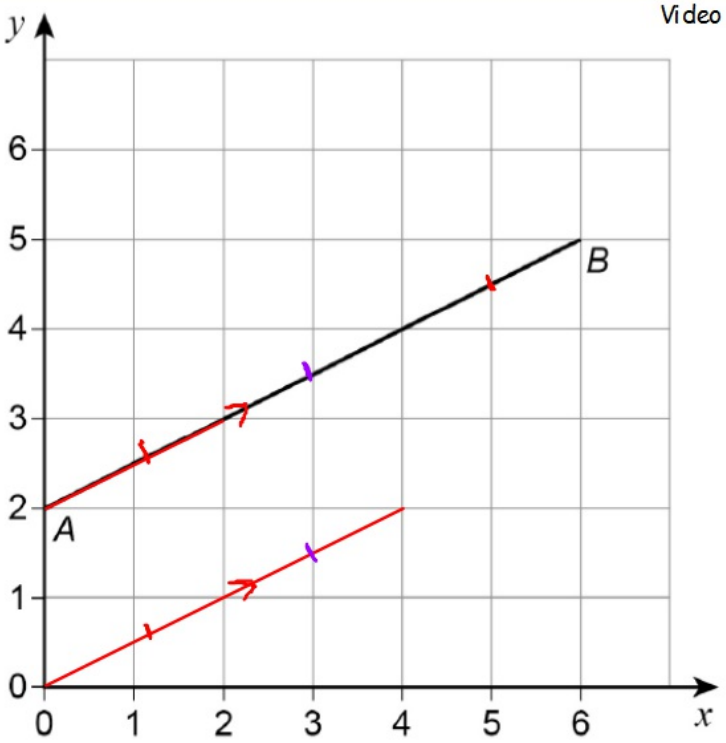


7 (c) On the grid, draw a line from point (0, 0) that is

parallel to AB

and

two thirds as long as AB. **[2 marks]**

R4a

Video created by W Neill

13 A charity sends an appeal letter to 3000 people.

The letter asks for a donation of money.

Here is some information about the last appeal letter the charity sent out.

$\frac{1}{2}$ of the people who were sent the letter made a donation.
The average donation was £8.60
$\frac{1}{3}$ of the people who made a donation filled in a tax form. The government adds 25% to the donations of these people.

13 (a) Using this information,

work out the amount the charity can expect to receive from this appeal.

R4a
R7

[6 marks]

Answer £ _____

Video created by W Neill

13 A charity sends an appeal letter to 3000 people.

The letter asks for a donation of money.

Here is some information about the last appeal letter the charity sent out.

$\frac{1}{2}$ of the people who were sent the letter made a donation. ✓ 3000 ÷ 2 = 1500 people
The average donation was £8.60 1500 x £8·60 = £12900
$\frac{1}{3}$ of the people who made a donation filled in a tax form. The government adds 25% to the donations of these people. 1/3 of 1500 = 500 people x 25% of £8·60 = £2·15

13 (a) Using this information,

work out the amount the charity can expect to receive from this appeal. £1075

[6 marks]

R4a
R7

Total expected = 12900 + 1075

Answer £ 13975

Video created by W Neill

12 How many minutes is 225 seconds?

Circle your answer.

R4a
N46

[1 mark]

$2\frac{5}{12}$ $2\frac{1}{4}$ $3\frac{1}{4}$ $3\frac{3}{4}$

Video created by W Neill

12 How many minutes is 225 seconds?

Circle your answer.

R4a
N46

[1 mark]

$2\frac{5}{12}$ $2\frac{1}{4}$ $3\frac{1}{4}$ $3\frac{3}{4}$

$\frac{225}{60} = 3\frac{45}{60}$

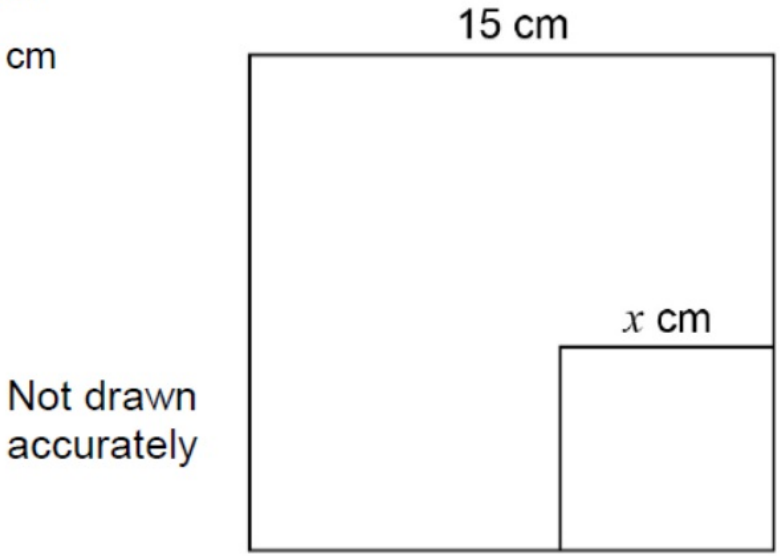
180

Video created by W Neill

13 A small square has length x cm

A large square has length 15 cm

R4a
G17



Not drawn accurately

The area of the small square is $\frac{1}{9}$ of the area of the large square.

Work out the value of x. **[3 marks]**

Answer _____

Video created by W Neill

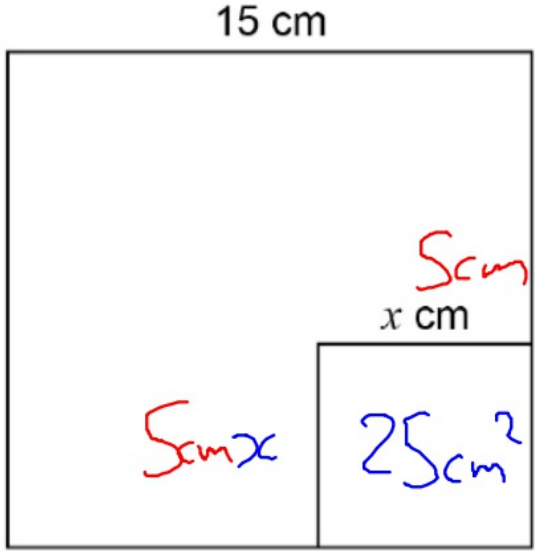
13 A small square has length x cm

A large square has length 15 cm

R4a
G17

large = 15 x 15

= 225 cm²



Not drawn accurately

x x x = 25

$\sqrt{25}$

= 5

The area of the small square is $\frac{1}{9}$ of the area of the large square.

1/9 of 225

=

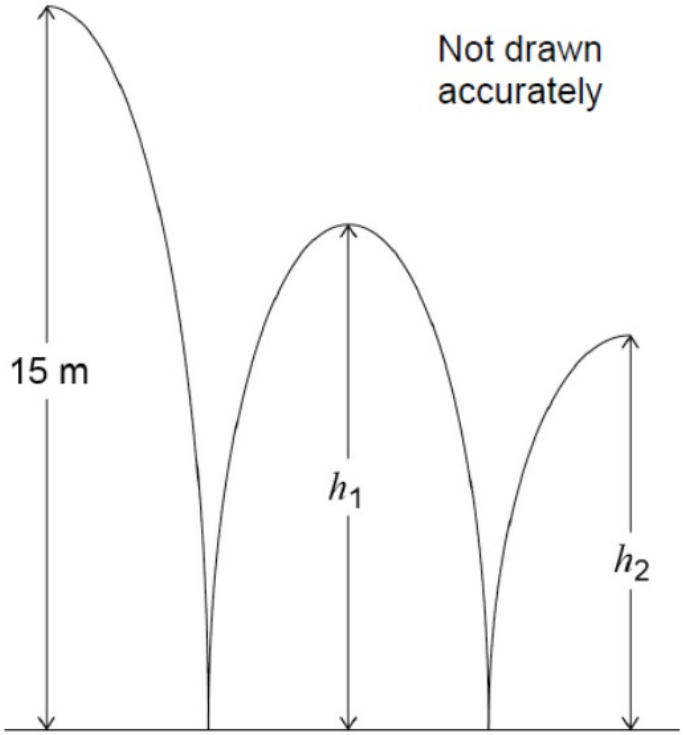
Work out the value of x. **[3 marks]**

Answer 5cm

14 A ball is thrown from a height of 15 metres.

Video created by W Neill

It bounces to height h_1, then to height h_2 as shown.



h_1 is three quarters of the original height.

26 (a) Jack expects h_2 to be three quarters of h_1

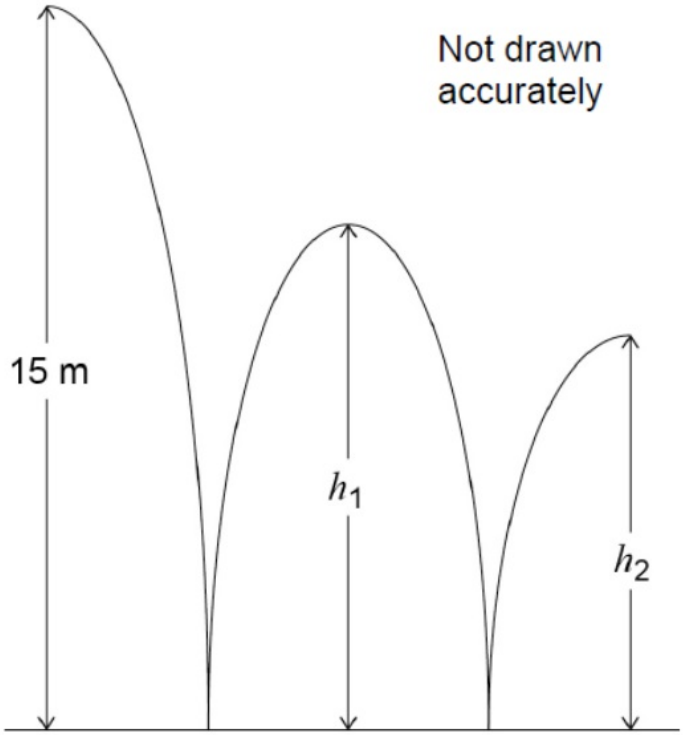
R4a Work out the value of h_2 that he expects. **[2 marks]**

Answer _____ metres

14 A ball is thrown from a height of 15 metres.

It bounces to height h_1, then to height h_2 as shown.

Video created by W Neill



h_1 is three quarters of the original height.

14 (b) N34

In fact, h_2 is two thirds of h_1

How does this affect the answer to part (a)?

Tick a box.

☐ The ball bounced higher than he expected

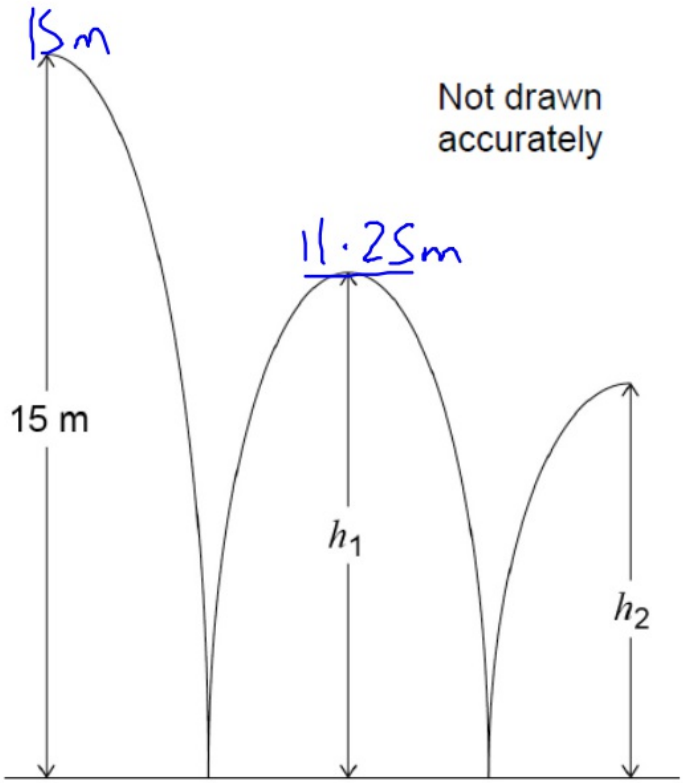
☐ The ball bounced lower than he expected

Show working to support your answer. **[2 marks]**

14 A ball is thrown from a height of 15 metres.

Video created by W Neill

It bounces to height h_1, then to height h_2 as shown.



h_1 is three quarters of the original height.

(a) Jack expects h_2 to be three quarters of h_1

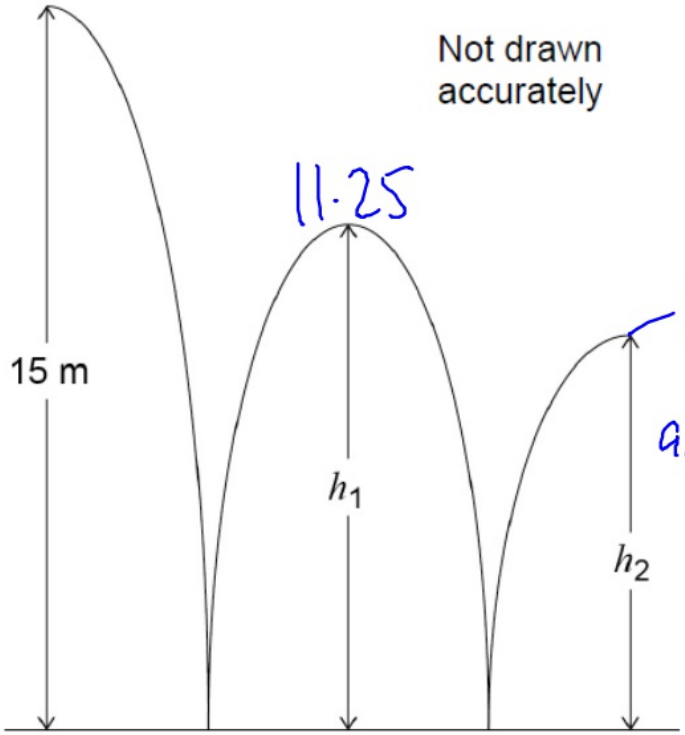
R4a Work out the value of h_2 that he expects. **[2 marks]**

Answer 8·4375 ✓ metres

A ball is thrown from a height of 15 metres.

It bounces to height h_1, then to height h_2 as shown.

Video created by W Neill



h_1 is three quarters of the original height.

(b) N34

In fact, h_2 is two thirds of h_1

How does this affect the answer to part (a)?

Tick a box.

thought 3/4

actual 2/3

☐ The ball bounced higher than he expected

☑ The ball bounced lower than he expected

Show working to support your answer. **[2 marks]**

2/3 < 3/4

8/12 9/12

Video created by W Neill

23 A shopkeeper compares the income from sales of a laptop in March and April.

R4a

April

Price	$\frac{1}{5}$ more than March
Number sold	$\frac{1}{4}$ less than March

By what fraction does the income from these sales decrease in April?

[3 marks]

Answer _____

23 A shopkeeper compares the income from sales of a laptop in March and April.

Video created by W Neill

R4a

$\frac{1}{5}$ of 100 = £20

$\frac{1}{4}$ of 20 = 5

April

Price	$\frac{1}{5}$ more than March
Number sold	$\frac{1}{4}$ less than March

12
×15
60
120
180

By what fraction does the income from these sales decrease in April?

[3 marks]

March: Price £100 × Sells 20 = £2000

April: £120 × 15 = £1800

Original 200 ← diff

2000 = 1/10 ✓

Answer _____