Higher Interleaving Quiz
Branch 5
Quizzes 1 to 3
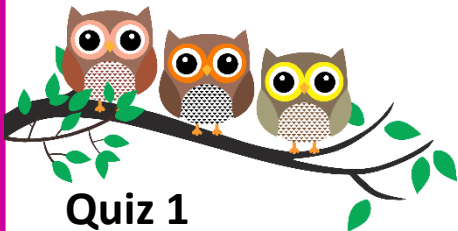
Quiz 1

Q	Topic	∑	R	A	G
1	Standard Form				
2	Factorise and solve				
3	Transformation				
4	Cumulative Frequency				

Home Study Focus

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Home Study Completed ☐

Quiz 2

Q	Topic	∑	R	A	G
1	Compound Interest				
2	Forming an Equation				
3	Right Angled Trigonometry				
4	Histogram				

Home Study Focus

_____

_____

Home Study Completed ☐

Quiz 3

Q	Topic	∑	R	A	G
1	Ratio Problem				
2	Iteration				
3	Area Problem				
4	Venn Diagram				

Home Study Focus

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Home Study Completed ☐
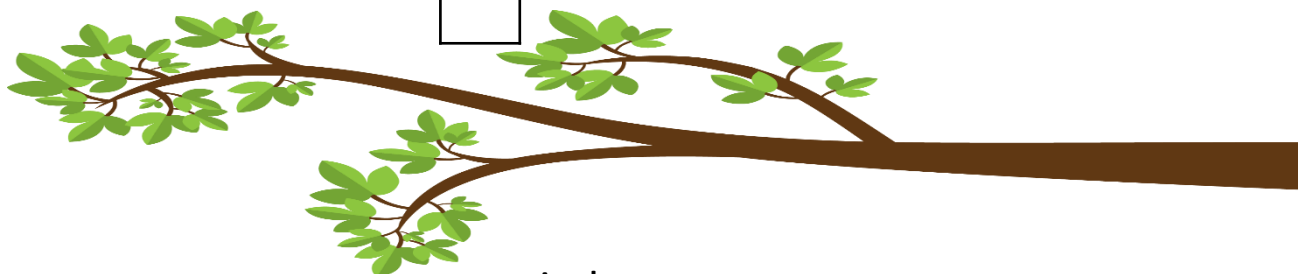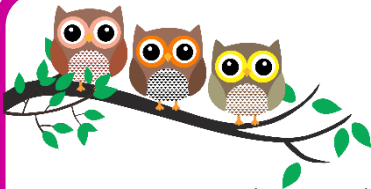
1) $(5 \times 10^a) + (5 \times 10^b) + (5 \times 10^c) = 505.05$
Write down a possible set of values for a, b and c.
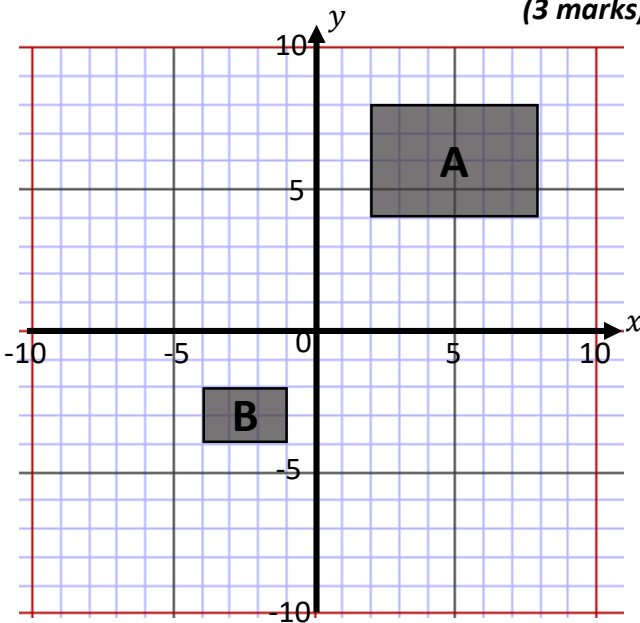*(3 marks)*

_____

_____

_____

a = _____   b = _____   c = _____

2) a) Factorise $16x^2 - 4$ *(1 mark)*

_____

Answer: _____

b) Factorise and solve $x^2 - 7x + 6 = 0$ *(3 marks)*

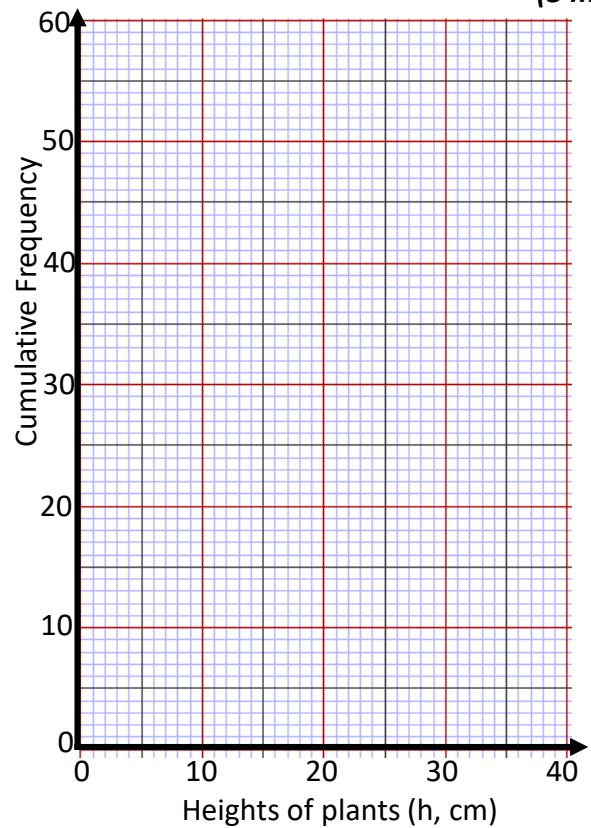_____

_____

Answer: _____

3) Describe the transformation from A to B.
(3 marks)

_____

_____

_____

4) The heights of 60 plants were recorded by a gardener. The results are shown in the table.

Height (h) in cm	Frequency		
$0 < h \leq 10$	15		
$10 < h \leq 15$	14		
$15 < h \leq 25$	23		
$25 < h \leq 30$	8		

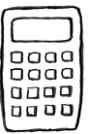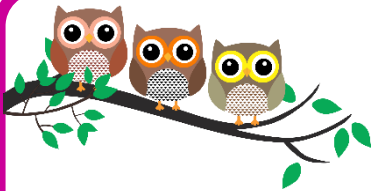a) On the grid, draw a cumulative frequency graph to represent the information.
(3 marks)

Cumulative Frequency

Heights of plants (h, cm)

b) How many plants were more than 28cm tall?
(2 marks)

Answer: _____

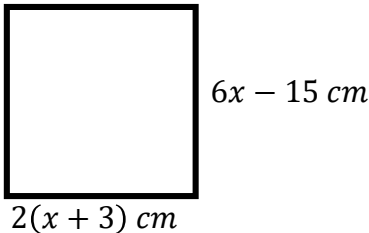| Q	Topic	$\sum$	R	A	G
1	Standard Form				
2	Factorise and solve				
3	Transformation				
4	Cumulative Frequency				

Higher Interleaving Quiz

Branch 5 Quiz 2

1) Sahoor invests £124 500 for 2 years at 3.5% per year compound interest. Work out the value of the investment at the end of 2 years.
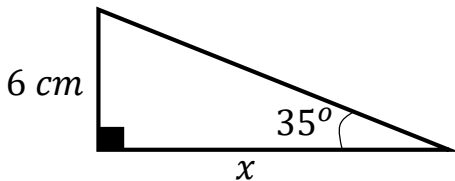
(3 marks)

_____

_____

_____

Answer: _____

2) The diagram shows a square. **(4 marks)**

$6x - 15\ cm$

$2(x + 3)\ cm$

Work out the length of one side.

_____

_____

_____

_____

Answer: _____

3) Work out the value of x. **(2 marks)**
Give your answer to 1 decimal place.

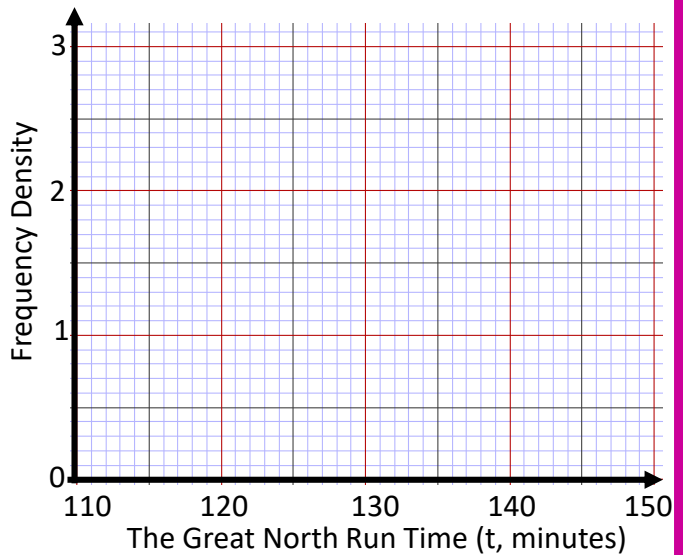$6\ cm$

35°

x

_____

_____

_____

Answer: _____

4) Anna carried out a survey of the Great North Run times of 80 runners, results are in the table.

| time (t) in mins	Frequency		
$110 < t \leq 120$	8		
$120 < t \leq 130$	29		
$130 < t \leq 145$	30		
$145 < t \leq 150$	13		

a) On the grid, draw a histogram for the information in the table.

(3 marks)

Frequency Density

The Great North Run Time (t, minutes)

b) A reporter states that a quarter of the runners took over 140 minutes to complete the Great North Run. Does Anna's Survey support the statement? ☐ Yes ☐ No **(3 marks)**

_____

_____

Q	Topic	$\sum$	R	A	G
1	Compound Interest				
2	Forming an Equation				
3	Right Angled Trigonometry				
4	Histogram				

Higher Interleaving Quiz
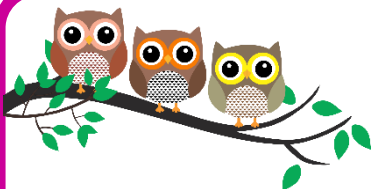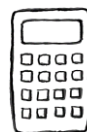
Branch 5 Quiz 3

1) Red paint costs £3.20 per litre.
   Blue paint costs £2.50 per litre
   Red and blue paint are mixed together in the ratio of 2:3 to make purple paint.
   Work out the cost of 22 litres of purple paint.

   (4 marks)

   _____

   _____

   _____

   _____

   _____

   _____

   Answer: _____

2) An approximate solution to an equation is found using this iterative process.
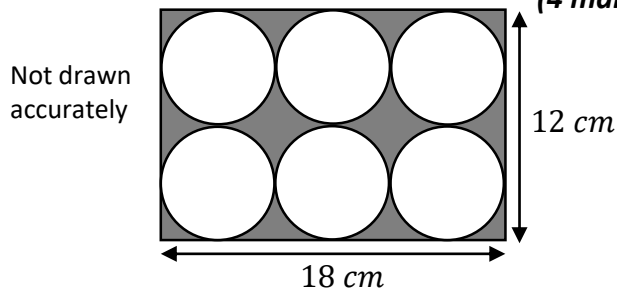
$$x_{n+1} = \frac{x_n^3 - 3}{5} \text{ and } x_1 = -1$$

   Work out the solution to 3 decimal places.

   (3 marks)

   _____

   _____

   _____

   _____

   _____

   Answer: _____

3) Six identical circles just fit inside a rectangle.
   Work out the area of the shaded section.
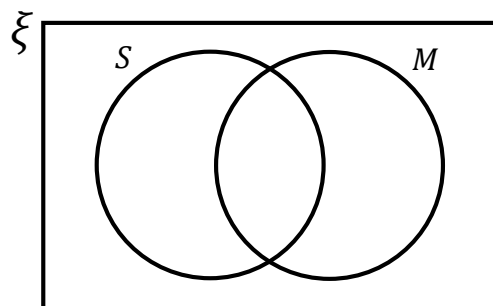   Give you answer to 3 significant figures.

   (4 marks)

   Not drawn accurately

   12 cm

   18 cm

   _____

   _____

   Answer: _____

4) $\xi = \{1,2,3,4,5,6,7,8,9,10,11,12\}$
   $S =$ square numbers
   $M =$ Multiples of three

   ξ S M

   a) Complete the Venn diagram.   *(3 marks)*

   b) One number is chosen at random.
      Write down $P(S \cup M)$ *(1 mark)*

   _____

   _____

   Answer: _____

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2	Iteration				
3	Area Problem				
4	Venn Diagram				