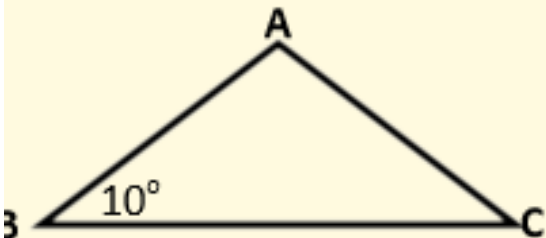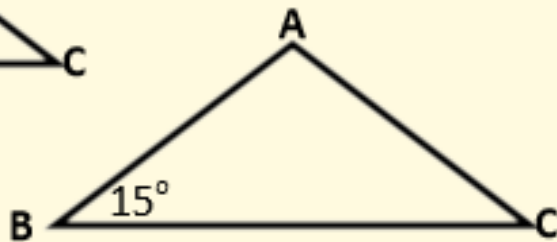1) The size of angle ABC follows a quadratic sequence in each of these triangles. What is the size of angle BAC in triangle 4?

Triangle 1

Triangle 2
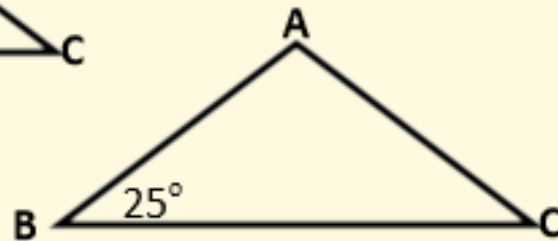
Triangle 3

Triangle 4

A

10°

B

C

A

15°

B

C

A

25°

B

C

A

70°

B

C

1) The size of angle ABC follows a geometric sequence in each of these triangles. What is the size of angle BAC in triangle 4?

Triangle 1

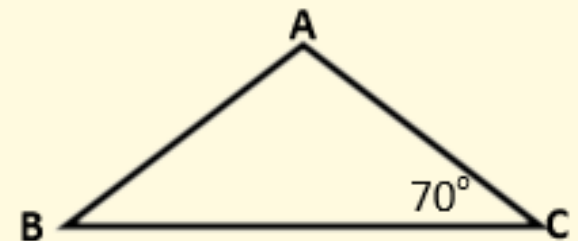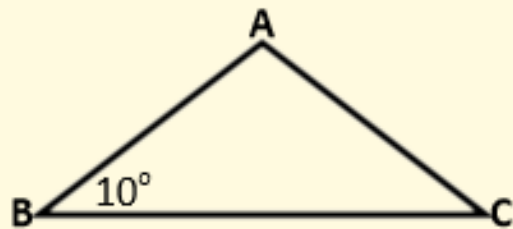Triangle 2

Triangle 3

Triangle 4
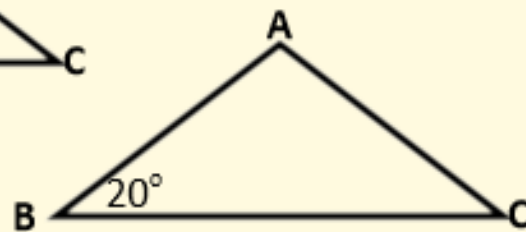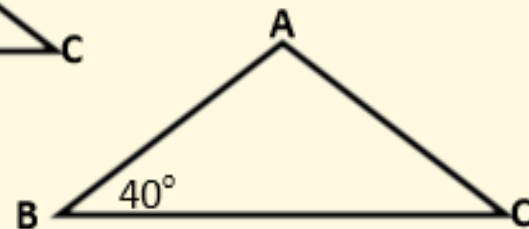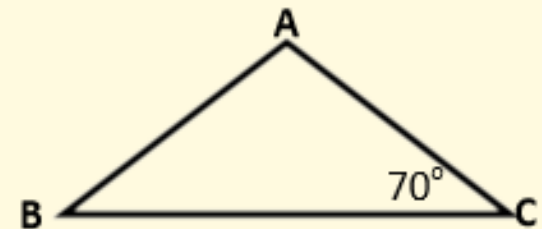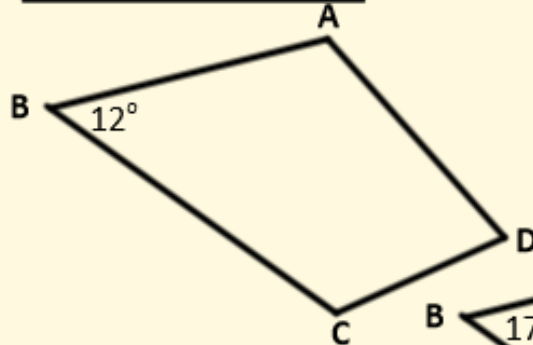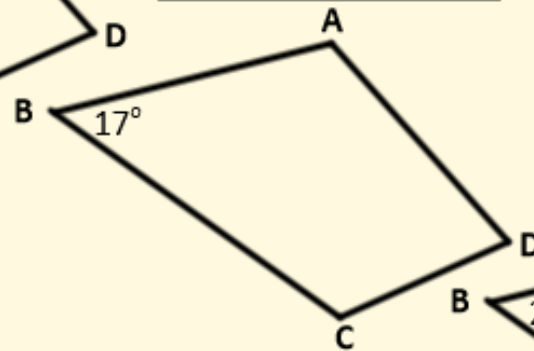
The size of angle ABC follows an artihmetic sequence in each of these quadrilaterals. What is the size of angle BAC in quadrilateral 4?
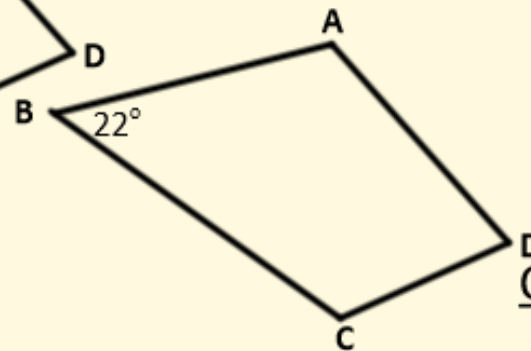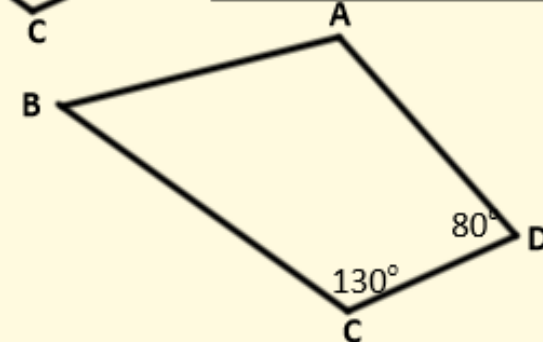
Quadrilateral 1

A

B
12°

D

C

Quadrilateral 2

A

B
17°

D

C

Quadrilateral 3

A

B
22°

D

C

Quadrilateral 4

A

B

80°
D

130°
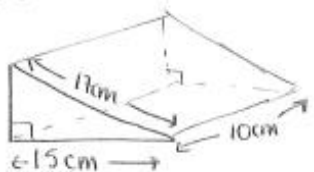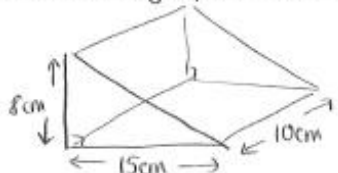
C

What would the nth term rule of the sequence for angle ABC be?

Possible Adaptations of an exam question to promote interleaving...

Work out the volume :

[Diagram: triangular prism, 17cm, 10cm, ←15cm→]

a) Name the shape.

b) How many vertices does the shape have?

c) How many faces does it have?

d) How many edges does it have?

e) Sketch a net of the shape

f) Draw an accurate net of the shape

g) Sketch the plan, front & side elevation

[Diagram: triangular prism, 8cm, 17cm, 10cm, 15cm, side, front]

Estimate the height, h cm.

[Diagram: triangular prism, h cm, 17cm, 10cm, ←15cm→]

Calculate the surface area :

[Diagram: triangular prism, 8cm, 10cm, ←15cm→]
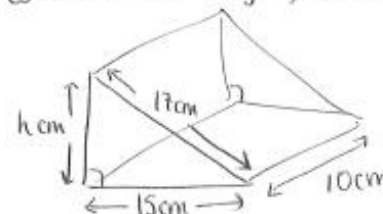
Diagram NOT accurately drawn

[Diagram: triangular prism, 17 cm, 8 cm, 10 cm, ←15 cm→]

Work out the volume of the triangular prism.

The density of the triangular prism shown to the left is 0.03 g/cm³. Calculate it's mass in a) g, b) kg

Calculate the volume of the triangular prism in the centre. Give your answer in:
a) m^3
b) mm^3

All measurements for the triangular prism above are given to the nearest cm.

a) Calculate the maximum possible volume

b) Calculate the minimum possible volume

The triangular prism above needs to be filled with water. Water comes in small bottles of 125ml. How many bottles of water are needed to fill the triangular prism?

Calculate the volume :

[Diagram: triangular prism, 8cm, 62°, 10cm]
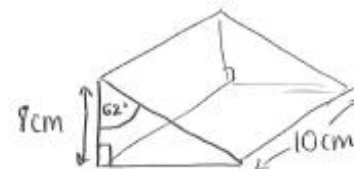
Interleaving - History

LEARNING OBJECTIVES:

TO DESCRIBE THE CAUSES OF HENRY VIII'S DIVORCE

TO EXPLAIN THE CAUSES OF HENRY VIII'S DIVORCE

TO MAKE A JUDGEMENT ON WHICH CAUSE WAS THE MOST IMPORTANT

TO SAY WHICH CAUSE IS THE LEAST IMPORTANT AND WHY

Learning Objectives:

- Describe the consequences of Magna Carta
- Begin to explain why Magna Carta was significant with a judgement
- Clearly explain why Magna Carta was significant with a judgement
- Prioritise the different consequences in my judgement

Interleaving – Curriculum

SJB

		Pythagoras and Trigonometry		
		Pre-requisite skills:		
		Small Step Objectives	Opportunities to Interleave	Agreed teaching method
	R₉	Understand and know when to use Pythagoras' Theorem		
	R₉	Use Pythagoras' Theorem to find the length of the hypotenuse		
	R₉	Use Pythagoras' Theorem to find the length of one of the shorter sides		
	R₉	Apply Pythagoras' Theorem to worded problems		
		Use Pythagoras' Theorem to calculate the perimeter or area of a triangle		
		Use Pythagoras' Theorem to calculate the length of a line segment		
		Explore ratio in similar right-angled triangles		
Half Term Y ~ 11 lessons		Work fluently with the hypotenuse, opposite and adjacent sides and know the three trig ratios (SOHCAHTOA)	Bearings	
		Use sine, cosine and tangent to find missing side lengths when the unknown is in the numerator		
		Use sine, cosine and tangent to find missing side lengths when the unknown is in the denominator		
		Use sine, cosine and tangent to find missing angles		
		Work with key angles in right-angled triangles and know the exact values of sin, cos and tan 30, 45, 60		
		Apply trigonometry to worded problems and recognise the terms 'angles of elevation' and 'angles of depression'		
		Select the appropriate method to solve right-angled triangle problems		
		Solve Pythagoras problems in 3D		
	5	Use trigonometry in 3D (find an angle between a line and a plane)		
	5	Understand and use the sine rule to find missing lengths		

Interleaving – Curriculum

Specification Points
3.22 Recall that electrolytes are ionic compounds in the molten state or dissolved in water
3.23 Describe electrolysis as a process in which electrical energy, from a direct current supply, decomposes electrolytes
3.24 Explain the movement of ions during electrolysis, in which: a positively charged cations migrate to the negatively charged cathode b negatively charged anions migrate to the positively charged anode
3.25 Explain the formation of the products in the electrolysis, using inert electrodes, of some electrolytes, including: a copper chloride solution b sodium chloride solution c sodium sulfate solution d water acidified with sulfuric acid e molten lead bromide (demonstration)
3.26 Predict the products of electrolysis of other binary, ionic compounds in the molten state
3.27 Write half equations for reactions occurring at the anode and cathode in electrolysis
3.28 Explain oxidation and reduction in terms of loss or gain of electrons
3.29 Recall that reduction occurs at the cathode and that oxidation occurs at the anode in electrolysis reactions
3.30 Explain the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes, and how this electrolysis can be used to purify copper
3.31 Core Practical: Investigate the electrolysis of copper sulfate solution with inert electrodes and copper electrodes

Interleaving and Retrieval Opportunities
Ionic bonding, different formulae, loss and gain of electrons to form ions
Link to electricity circuits in physics, property of ionic substances
Formulae construction, writing word and symbol equations, determining the relative formula mass of substances, gas tests, States of matter
Electronic configuration of atoms and ions
Extraction of metals and uses of metals
Practical Skills - planning, highlighting risk, graph drawing and evaluating experiment and results

Interleaving – Curriculum

Week	Paper 1 (Theme 1 and 4)/Teacher 1	Paper 2 (Theme 2 and 3)/Teacher 2
*1	• 1.5.1 Role of an entrepreneur	• 2.1.4 Planning • *Personal finance – personal cash flow*
2	• 1.5.2 Entrepreneurial motives and characteristics • *Influencers/Youtubers* • *Speaker: Mike Buonaiuto CEO of Shape History (1.5.1, 1.5.2 and 1.5.6)*	• 2.1.1 Internal finance • *Personal finance – internal sources (making the most of savings e.g. Nutmeg, ISAs, Investment in Crypto*
3	• 1.5.3 Business objectives	• 2.1.2 External finance and 2.1.3 Liability • *Personal finance – credit ratings, factors affecting credit ratings, how to improve a credit rating, options for personal finance e.g. Klarna, credit cards, overdrafts, leasing etc.* • *1.5.4 Forms of business*
4	• 1.5.4 Forms of business	• 2.2.2 Sales, revenue, and costs
5	• 1.5.5 Business choices • *Assessed homework*	• 2.2.3 Break-even
6	• 1.1.1 The market	• 2.2.1 Sales forecasting
7	• 1.1.1 The market	• 3.3.1 Quantitative sales forecasting • *Assessed homework* • *The future of vehicles*
1	• 1.1.2 Market research • *2.2.1 Sales forecasting, 2.1.4 Cash flow forecasting, 2.2.4 budgets*	• 2.2.4 Budgets
2	• 1.1.3 Market positioning	• 2.3.1 Profit
3	• 1.3.1 Product/Service design	• 3.5.1 Interpretation of financial statements • Business models of Uber Airbnb: few fixed assets
4	• 1.3.2 Branding and promotion • *Psychological tools to get people to buy e.g.in-app purchases*	• 2.3.2 Liquidity
5	• 1.3.2 Branding and promotion	• 3.5.2 Ratio analysis • *2.1.2 Sources of finance* • Paper 2 assessment