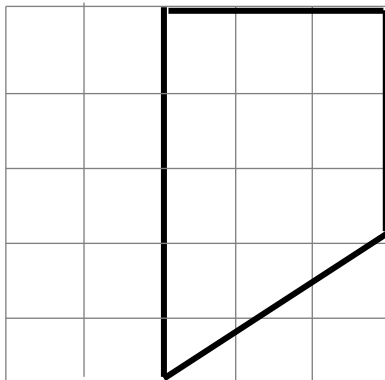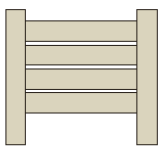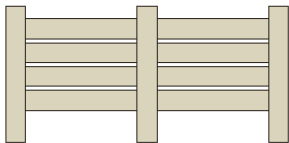|	**Nat 4 Added Value – Paper 1A**
1	Siobhan wants to buy some new boots in the January sales. They are priced at £130 but have 20% off in the sale. How much will Siobhan pay for her boots?
2	A Maths textbook cost £9.49.How much will it cost to buy 8 new textbooks?
3	Dean mixes 1.48 litres of orange squash with 6.2 lites of water to make an orange drink. He uses 5.85 litres of the drink at a children's party. How much of the orange drink does he have left?
4	A bed shop is having a sale. **ALL BEDS** $\frac{2}{5}$ **OFF THE NORMAL PRICE** The normal price of a bed is £760. Find the sale price of this bed.
5	Enlarge this shape using a Scale factor of 3/2

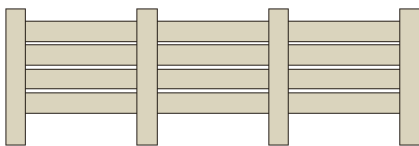|	**Nat 4 Added Value – Paper 2A**
1	A Sprinter train travels at an average speed of 144 kilometres per hour. The train takes 1 hour 12 minutes to travel between Dingwall and Aberdeen. Calculate the distance between Dingwall and Aberdeen.
2	Solve algebraically $7t - 3 = t + 45$

3 A children's playground is to be fenced
The fence is made in sections using lengths of wood as shown below.
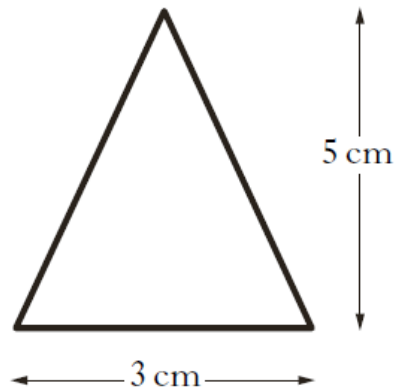

1 section

2 sections

3 sections

(a) Copy and complete the table below.

Number of sections (s)	1	2	3	4	5		12
Number of lengths of wood (w)	6	11					

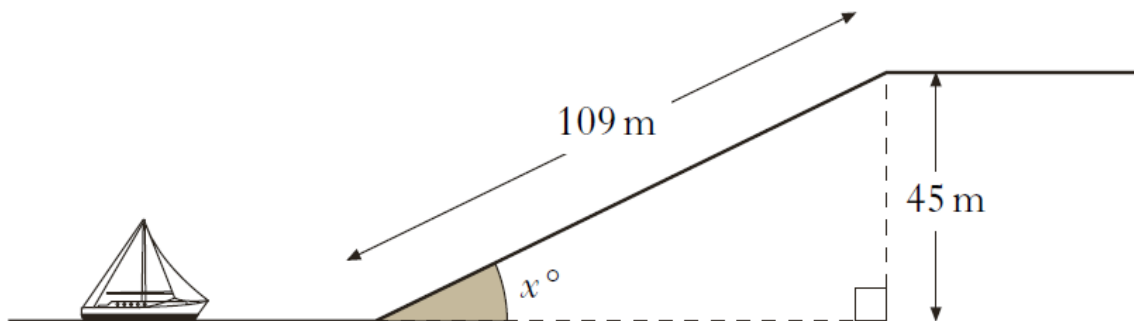(b) Write down a formula for calculating the number of lengths of wood (w), when you know the number of sections (s).

(c) A fence has been made from 81 lengths of wood.
How many sections are in this fence?
Show all of your working.

4	An earring in the shape of an isosceles triangle is made from silver wire. The dimensions of the earring are shown on the diagram

Calculate the length of silver wire needed to make a **pair** of earrings.

5 cm

3 cm

5	A boat elevator is used to take a boat from the lower canal to the upper canal. The boat elevator is in the shape of a triangle. The length of the hypotenuse is 109 metres. The height of the triangle is 45 metres.

109 m

45 m

$x°$

Calculate the size of the shaded angle $x°$.

6	Simplify $2(3x + 3) + 3(x - 1)$

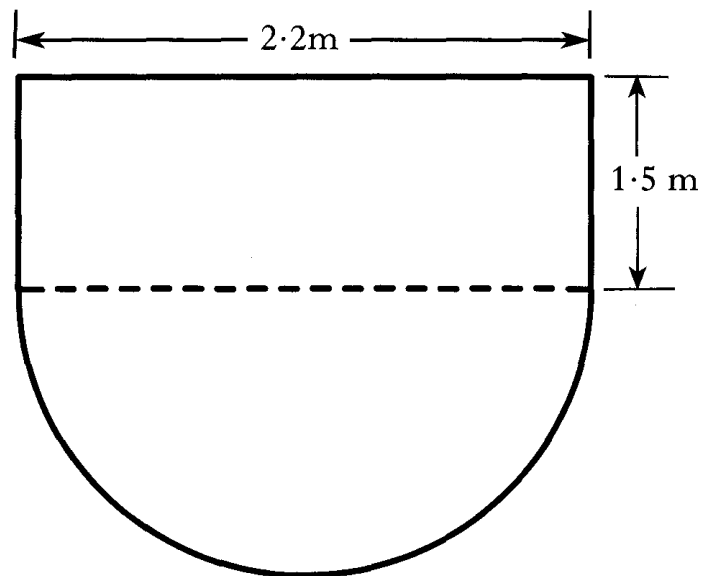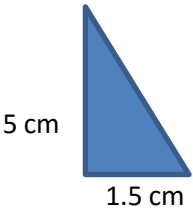| 7	At the World Athletic Championships the mean time for the first semi-final of the 100 metres was 9·98 seconds.
	For the second semi-final the times, in seconds, were:
	10·21 10·04 9·92 9·98 10·04 9·94 9·9 9·73.
	Was the mean time for the second semi-final better than the mean time for the first semi-final? Give a reason for your answer.
8	The floor of a conservatory consists of a rectangle and a semicircle. The floor has the shape shown below. The measurements are in metres. Find the total area of the floor.

	Answers Paper 1A
1	20% of 60 is £12 Pamela paid **£48**
2	£9.49 x 8 = **£75.92**
3	1.4 + 6.2 = 7.68 7.68 – 5.85 = **1.83 litres** 1.5
4	760 ÷5 = 152 152 x 2 = 304 Discount is £304 Sale price is **£456**
5	Straight lines 5 units, 3 units and 3 units change to **7.5 units, 4.5 units and 4.5 units**

	Answers Paper 2A
1	1 hour and 12 minutes = 1.2 hours Distance = 144 x 1.2 = **172.8 km**
2	$6t - 3 = 45$ → $6t = 48$ → **$t = 8$**
3	(a) <table><tr><td>Number of sections (s)</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td></td><td>12</td></tr><tr><td>Number of lengths of wood (w)</td><td>6</td><td>11</td><td>**16**</td><td>**21**</td><td>**26**</td><td></td><td>**61**</td></tr></table> (b) $w = 5s + 1$ (c) $81 = 5s + 1$ → $80 = 5s$ → **$s = 16$**
4	Form a right-angled triangle with correct dimensions Use Pythagoras Theorem 5 cm $c^2 = a^2 + b^2$ $c^2 = 1.5^2 + 5^2$ $c^2 = 27.25$ 1.5 cm $c = \sqrt{27.25}$ $= 5.22$ cm two earring = 2 x (3 + 5.22 + 5.22) = **26.88 cm**
5	$\sin x = \dfrac{O}{H}$ → $\sin x = \dfrac{45}{109}$ → $x = \sin^{-1}(45/109)$ angle is **24.38° or 24°**
6	$2x + 6 + 3x - 3$ = **9x + 3**
7	Mean = $\dfrac{79.76}{8}$ = 9.97 9.97 < 9.98 so mean time from second semi-final is faster/better
8	Area one semi-circle is $\dfrac{\pi 1.1^2}{2}$ = 1.9 m² Area of rectangle 2.2 x 1.5 = 3.3m² **Total area 1.9 + 3.3 = 5.2 m²**