

Ex 17 Patterns

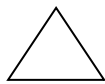
Section A (Non-calculator)

- 1 Carry out the following calculations
- a) 15% of £90 b) $7 - 12 \cdot 05 + 16 \cdot 1$
- c) $1 \cdot 48 \div 40$
- 2 a) Evaluate $5pq$ when $p = -2$ and $q = 3$
- b) Evaluate $\frac{3s}{tu}$ when $s = 6$, $t = 2$ and $u = -3$

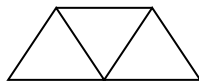
Section B (Knowledge)

Only use your calculator if you need to!

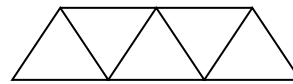
- 3 The sides of a bridge are constructed by joining sections made up of girders.



1 section
(3 girders)



2 sections
(7 girders)



3 sections

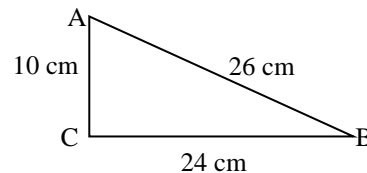
- a) Copy and complete the table below.

Number of sections (s)	1	2	3	4		10
Number of girders(g)	3	7				

- b) Write down a formula for the number of girders, g , when you know the number of sections, s .

Section C (Mixed)

- 4 Prove that this triangle is right angled.



- 5 a) Ryan goes on holiday to Spain.
He buys a camera costing 310.80 euros
How much is this in pounds sterling?
- b) The same camera costs 432 dollars in America.
In which of the countries is the camera cheapest?

EXCHANGE RATE for £1 Sterling

Europe	1.2 Euros
America	1.6 American Dollars
Australia	2.0 Australian Dollars

- 6 The mass of water on the earth's surface is $1 \cdot 41 \times 10^{18}$ tonnes.
The total mass of the earth is $5 \cdot 97 \times 10^{21}$ tonnes.
Express the mass of water on the earth's surface as a percentage of the total mass of the earth. Give your answer in **scientific notation**.