Day 208	A Tier 10-a-day
1 Simplify fully (a) $\frac{10x^2y^2}{4xy^5}$ (b) $(4x^4y)^3$	
2 A shop sells rice in 3 different sizes. Small bag: 200 g for £1.70 Medium bag: 400 g for £3.20 Large bag: 1000 g for £8.35 Which bag is the best value for money? You must show your working.	
3 Mo invests £1,000 in an investment bond. (Calculator) The account pays compound interest at 1.5% per year. Work out the value of the investment after 3 years.	
4 The two triangles are similar. Work out the value of x. The diagrams are not drawn accurately. 	
5 Here are the first four terms of a geometric sequence. 1, 5, 25, 125 (a) Write down the next two terms. (b) Work out the 6th term.	

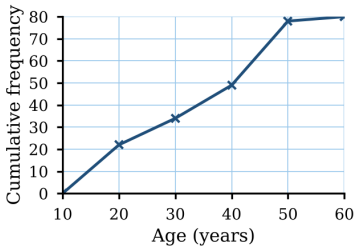
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6 The stem and leaf diagram shows the ages of 11 people.
Key: 3 | 5 represents 35 years
(a) Work out the median age.
(b) Work out the interquartile range.

Stem	Leaf
3	5 7 9
4	1 3 4
5	3 6
6	2 3 5

7 Here are the first five terms of a quadratic sequence.
8, 13, 22, 35, 52
(a) Find an expression for the nth term.
(b) Work out the 20th term.

8 The cumulative frequency graph shows information about the age of 80 visitors.
Use the graph to find an estimate for
(a) the median,
(b) the number of visitors with a age greater than 30 years.



9 A cyclist travels 310 metres in 17.1 seconds.
The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second.
(a) Work out the upper bound and the lower bound of the speed in m/s.
(b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.

10 Ship A sails 12 miles from a port on a bearing of 240°.
Ship B sails 25 miles from the same port on a bearing of 345°. (Calculator)
Work out the distance between the two ships.
Give your answer to 3 significant figures.