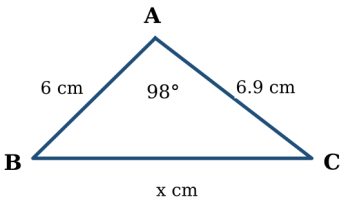
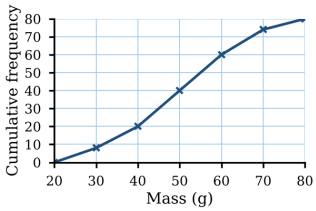
Day 213	IGCSE 10-a-day
1 A is the point (7, −2) and B is the point (7, 2). (a) Write down the vector **AB**. (b) Find |**AB**|, giving the answer as a surd in simplest form if it is not exact.	
2 The 5th term of an arithmetic sequence is 45. The 11th term of the sequence is 81. (a) Find an expression for the nth term of the sequence. (b) Is 158 a term of the sequence? You must show your working.	
3 Q is 10% less than R. R is 60% more than B. Work out Q as a percentage of B.	
4 A is the point (0, 0) and B is the point (4, −2). Find an equation of the perpendicular bisector of AB. Give your answer in the form ax + by = c, where a, b and c are integers.	
5 Work out the length of BC. Give your answer correct to 3 significant figures. (Calculator) 	

Day 213 **IGCSE 10-a-day**

6 $f(x) = 2x + \frac{8}{x}$ for $x > 0$

(a) Find the range of values of x for which f is a decreasing function.
(b) Write down the least value of f(x).

7 The cumulative frequency graph gives information about the masses of 80 apples picked from a tree.
(a) Find an estimate for the median and the interquartile range.
(b) Estimate how many of the 80 had a mass greater than 65.



8 A curve has equation $y = -4x - \frac{3}{x}$.

Find the coordinates of the points on the curve where the gradient is -1.

9 A population is decreased by x% in one year and then decreased by a further x% the next year.
Over the two years the population decreases by 75%.
Work out the value of x.

10 The curve C has equation $y = x^2 + 6x + 3$.
The points A and B on C have x coordinates 0 and 4.
The tangents to C at A and at B meet at the point T. Find the coordinates of T.