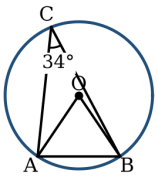
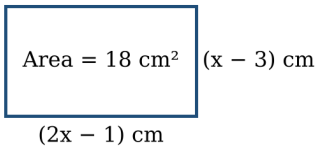
Day 169	S Tier 10-a-day
1 The 5th term of an arithmetic sequence is 30. The 12th term of the sequence is 51. (a) Find an expression for the nth term of the sequence. (b) Is 62 a term of the sequence? You must show your working.	
2 Rationalise the denominator of $\frac{29}{2\sqrt{3}}$ Give your answer in its simplest form.	
3 A, B and C are points on a circle, centre O. Angle ACB = 34°. (a) Work out the size of angle AOB. (b) Work out the size of angle OAB. The diagram is not drawn accurately. 	
4 A wooden block in the shape of a cuboid weighs 150 N. Its smallest face has area 1500 cm^2. Its largest face has area 3,000 cm^2. Pressure = force ÷ area Work out (a) the greatest pressure and (b) the least pressure the wooden block can exert on the ground, in N/m^2.	
5 Work out $(1.1 \times 10^3)^2$ Give your answer in standard form.	

Day 169 **S Tier 10-a-day**

6 The diagram shows a rectangle of length $(2x - 1)$ cm, width $(x - 3)$ cm and area 18 cm^2.
(a) Show that $2x^2 - 7x - 15 = 0$.
(b) Work out the perimeter of the rectangle.



7 Make u the subject of $v(u + 4) = u - v$

8 The table gives information about the ages of some people.
Work out an estimate for the mean age.
Give your answer correct to 1 decimal place.
(Calculator)

Age, a (years)	Frequency density
$0 < a \leq 10$	1.7
$10 < a \leq 20$	1.2
$20 < a \leq 40$	0.5
$40 < a \leq 60$	0.3

9 ABCD is a rectangle with AB = 11 cm and AD = 11 cm.
A point P inside the rectangle is such that AP ≤ 8 cm and P is nearer to AB than to AD.
Work out the area of the region in which P can lie. Give your answer in terms of π.

10 Rhys invested £20,000 in a savings account for 2 years.
Compound interest was paid at a fixed rate per year.
At the end of the 2 years the account held £22,472.
Work out the annual rate of interest.
(Calculator)