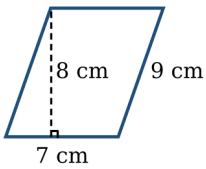
Day 331	A Tier 10-a-day
1 The diagram shows a parallelogram. Work out its area. The diagram is not drawn accurately.  	
2 Factorise $x^2 + 9x + 18$	
3 By rounding each number to 1 significant figure, estimate the value of $\frac{68.0 \times 7.0}{0.49}$	
4 Solve $3x^2 + x - 4 = 0$	
5 A plane leaves an airport and travels 16 km on a bearing of 190°. (Calculator) It then travels 30 km on a bearing of 100°. (a) Work out how far it is now from the airport. (b) Work out the bearing of its final position from the airport. Give your answer to the nearest degree.	

Day 331 **A Tier 10-a-day**

6 (a) Write 35 and 49 as products of prime factors.
(b) Find the highest common factor (HCF) and the lowest common multiple (LCM) of 35 and 49.

7 The table shows the distances, in km, travelled by 20 lorries.
(a) Write down the class that contains the median.
(b) Work out an estimate for the mean.

Distance, d (km)	Frequency
$0 < d \leq 10$	2
$10 < d \leq 20$	4
$20 < d \leq 30$	2
$30 < d \leq 40$	8
$40 < d \leq 50$	4

8 Show that $\frac{\sqrt{96} - \sqrt{54}}{\sqrt{6}}$ is an integer, and find its value.

9 A solid is made from a cylinder and a cone.
The cylinder has radius 9 cm and height 11 cm.
The cone has the same radius as the cylinder and perpendicular height 9 cm.
Work out the total volume. Give your answer in terms of π.

10 y is directly proportional to the square root of x.
When x = 36, y = 30.
(a) Find a formula for y in terms of x.
(b) Work out the value of y when x = 9.