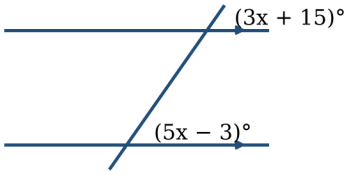
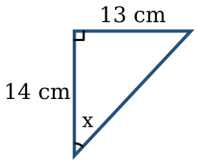
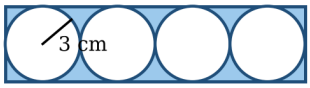
Day 143	A Tier 10-a-day
1 A sprinter travels at 4 m/s. Work out this speed in kilometres per hour.	
2 Simplify fully $\frac{x^2 - 64}{x^2 + 8x}$	
3 The diagram shows two parallel lines crossed by a straight line. (a) Work out the value of x. (b) Work out the size of the angle marked (3x + 15)°. The diagram is not drawn accurately. 	
4 Tom runs around a track in 50 seconds. Isla runs around the same track in 70 seconds. They start together at the start line and keep running. How many laps will each have run when they are next together at the start line?	
5 Work out the size of angle x. (Calculator) Give your answer to 1 decimal place. The diagram is not drawn accurately. 	

Day 143	A Tier 10-a-day
6 The curve C has equation $y = x^2 + 4x - 12$ (a) Find the coordinates of the points where C crosses the x-axis. (b) Find the coordinates of the turning point of C.	
7 A bag contains 6 mint and 5 fruit sweets. Two sweets are taken at random without replacement. Work out the probability that the two sweets are different colours.	
8 Write $0.3\dot{5}\dot{4}$ as a fraction in its simplest form.	
9 4 identical circles of radius 3 cm fit exactly inside a rectangle. The circles touch each other and the sides of the rectangle. (Calculator) Work out the area of the shaded region. Give your answer to 3 significant figures. 	
10 Rationalise the denominator of $\frac{87}{6 - \sqrt{7}}$ Give your answer in the form $a + b\sqrt{c}$ where a and b are integers.	