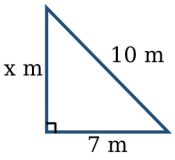
Day 309	A Tier 10-a-day
1 There are 29 students in a class. 20 students do drama and 11 students do choir. 3 students do neither. (a) Work out how many students do both. (b) One student is chosen at random. Find the probability that they do drama only.	
2 Expand and simplify $(x - 3)(2x - 3)$	
3 Work out the length of x. (Calculator) Give your answer to 3 significant figures. The diagram is not drawn accurately.  	
4 Work out $(2 \times 10^2)^2$ Give your answer in standard form.	
5 The price of a train ticket increases by 20%. The new price is £480. Work out the price before the increase.	

Day 309	A Tier 10-a-day
6 Two similar model boats have volumes 8 cm^3 and 64 cm^3. The smaller one has height 5 cm. Work out the height of the larger one.	
7 Show that $\frac{\sqrt{50}+\sqrt{72}}{\sqrt{2}}$ is an integer, and find its value.	
8 The point P(4, −3) lies on a circle with centre O(0, 0). (a) Work out the equation of the circle, in the form $x^2 + y^2 = r^2$. (b) Find the equation of the tangent to the circle at P.	
9 (a) Write 132 and 48 as products of prime factors. (b) Find the highest common factor (HCF) and the lowest common multiple (LCM) of 132 and 48.	
10 A, B, C and D are points on a circle. AC and BD meet at E. Angle BAC = 43° and angle ACD = 41°. Work out the size of angle x (angle AEB). Give reasons for your working. 