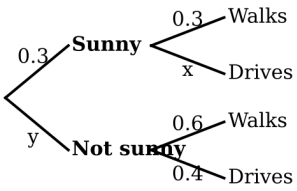
Day 122	A Tier 10-a-day
1 Expand and simplify $(x + 1)^2 - (x - 4)(x - 3)$	
2 (a) Write 0.000011 in standard form. (b) Write 1.25×10^4 as an ordinary number.	
3 Factorise $6x^2 - 11x + 3$	
4 A metal block has a mass of 198 g. The density of the material is 0.9 g/cm^3. Work out the volume of the metal block.	
5 Expand and simplify $(7 - 2\sqrt{5})^2$ Give your answer in the form $a + b\sqrt{c}$	

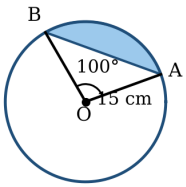
Day 122	A Tier 10-a-day

6 The tree diagram shows probabilities for two events.
(a) Work out the values of x and y.
(b) Work out the probability that Omar walks to work.



7 A rectangle has width x cm and length (x + 7) cm.
The area of the rectangle is 120 cm^2.
(a) Show that $x^2 + 7x - 120 = 0$
(b) Work out the value of x.

8 The diagram shows a circle with centre O and radius 15 cm.
Angle AOB = 100°. (Calculator)
Work out the area of the shaded segment.
Give your answer to 3 significant figures.



9 A boat leaves a port and travels 24 km on a bearing of 125°. (Calculator)
It then travels 7 km on a bearing of 215°.
(a) Work out how far it is now from the port.
(b) Work out the bearing of its final position from the port. Give your answer to the nearest degree.

10 A runner travels 350 m in 18 s. The distance is measured to the nearest 10 metres and the time to the nearest 0.1 second. (Calculator)
Work out the upper bound for the runner's speed in m/s.
Give your answer correct to 3 significant figures.