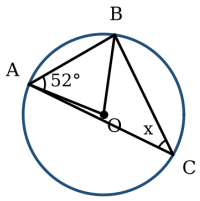
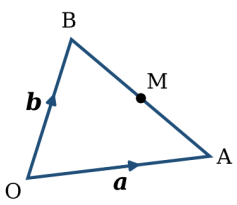
Day 13	A Tier 10-a-day
1 Without using a calculator, work out the exact value of 3 sin 45° + 5 cos 30° Give your answer in its simplest form.	
2 A mechanic charges £55 plus £40 for each hour of work. (a) Write a formula for the total cost, £C, after t hours. (b) Aisha pays £575 in total. Work out the number of hours.	
3 A, B and C are points on a circle with centre O. Angle OAB = 52°. (a) Work out angle AOB. (b) Work out the size of angle x. Give reasons for your answers. 	
4 Make x the subject of $y = \frac{4}{x^2}$	
5 OAB is a triangle. →OA = **a** and →OB = **b**. M is the midpoint of AB. Find, in terms of **a** and **b**, (a) →AB (b) →OM 	

Day 13	A Tier 10-a-day
6 Simplify fully $\frac{x^2 - 9}{x^2 - 3x}$	
7 The price of a games console is increased by 50%. The new price is then decreased by 20%. Work out the overall percentage change.	
8 (a) Write 36 and 132 as products of prime factors. (b) Find the highest common factor (HCF) and the lowest common multiple (LCM) of 36 and 132.	
9 Write $0.9\dot{8}$ as a fraction in its simplest form.	
10 A bag contains red counters and blue counters in the ratio 1 : 3. 18 more red counters are added to the bag. The ratio of red counters to blue counters is now 11 : 6. How many counters were in the bag at the start?	