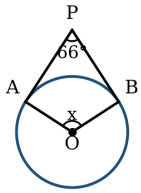
Day 115	A Tier 10-a-day
1 Here are the ingredients for 6 cupcakes. Sugar: 150 g Flour: 180 g Milk: 300 ml (a) Work out how much sugar is needed for 36 cupcakes. (b) Hannah has 601 g of flour. What is the greatest number of cupcakes she can make?	
2 Here are the first four terms of a sequence. $-2, -9, -16, -23$ (a) Find an expression for the nth term. (b) Is -120 a term of this sequence? You must show your working.	
3 (a) Write 25 and 55 as products of prime factors. (b) Find the highest common factor (HCF) and the lowest common multiple (LCM) of 25 and 55.	
4 A triangle has sides of length 25 cm, 7 cm and 24 cm. Is the triangle right-angled? You must show your working.	
5 Factorise $x^2 + 7x + 12$	

Day 115	A Tier 10-a-day
6 A cafe menu has 2 starters, 3 main courses and 2 desserts. (a) How many different three-course meals are possible? (b) A customer chooses a main course and either a starter or a dessert (not both). How many different meals are possible?	
7 PA and PB are tangents to a circle with centre O. Angle APB = 66°. Work out the size of angle x (angle AOB). Give a reason for each step of your working. 	
8 Jug A contains 28 litres of a mixture of concentrate and water in the ratio 6 : 1. Jug B contains 9 litres of a mixture of concentrate and water in the ratio 2 : 1. The contents of both jugs are mixed together. Work out the ratio of concentrate to water in the mixture. Give your answer in its simplest form.	
9 A boat is at sea. (Calculator) From the top of a vertical cliff 60 m high, the angle of depression of the boat is 25°. Work out the horizontal distance of the boat from the foot of the cliff. Give your answer to 3 significant figures.	
10 75% of a number is 225. (Calculator) Work out 90% of the same number.	