Day 109	A Tier 10-a-day
1 The probability that Femi hits the target is 0.4. The probability that Amy hits the target is 0.2. The two events are independent. Work out the probability that at least one of them will hit the target.	
2 A cuboid has length 12 cm and width 2 cm. Its total surface area is 272 cm^2. Work out the height of the cuboid.	
3 Expand and simplify $(x - 4)^2 - (x + 1)(x - 5)$	
4 Bus A leaves a bus station every 15 minutes. Bus B leaves the same station every 12 minutes. Both buses leave together at 6:20 am. At what time will they next leave together?	
5 The mean of the five numbers x, 19, 15, 6, 12 is 13. Work out the value of x.	

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6 A rectangle has length (2x + 2) cm and width (x + 4) cm. The perimeter of the rectangle is 66 cm. (a) Work out the value of x. (b) Work out the area of the rectangle.	
7 The point P(3, −4) 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.	
8 Expand and simplify $(4 + 2\sqrt{6})^2$ Give your answer in the form $a + b\sqrt{c}$	
9 Rationalise the denominator of $\frac{11}{4 + \sqrt{5}}$ Give your answer in the form $a + b\sqrt{c}$ where a and b are integers.	
10 Solve the simultaneous equations $x^2 + y^2 = 25$ $y = x + 5$	