Day 162 **A Tier 10-a-day**

1 The table shows information about 67 people.
One person is chosen at random.
(a) Find the probability that the person chose chicken.
(b) The person is a woman. Find the probability that they chose pasta.

	Chicken	Pasta	Total
Men	11	16	27
Women	25	15	40
Total	36	31	67

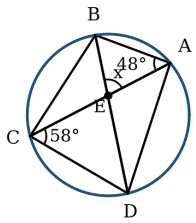
2 Solve $5(x - 5) = -3(x - 5)$

3 The table shows the probabilities of the outcomes of a biased four-sided dice.
(a) Work out the value of y.
(b) The four-sided dice is rolled 300 times.
Estimate the number of times it lands on 2.

Score	1	2	3	4
Probability	0.25	y	3y	0.55

4 $\mathbf{p} = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$.
Work out the magnitude (length) of $\mathbf{p}$.

5 Zara invests £500 in a savings account. (Calculator)
The account pays compound interest at 2.5% per year.
Work out the total interest earned after 5 years.

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6 Work out the value of $3a^2 - 2ab - 2b^2$ when $a = -2$ and $b = 2$	
7 Show that $\frac{\sqrt{32} + \sqrt{72}}{\sqrt{2}}$ is an integer, and find its value.	
8 x : y = 2 : 1 y : z = 7 : 6 (a) Work out the ratio x : y : z (b) x, y and z add up to 108. Work out the value of z.	
9 A, B, C and D are points on a circle. AC and BD meet at E. Angle BAC = 48° and angle ACD = 58°. Work out the size of angle x (angle AEB). Give reasons for your working. 	
10 A cyclist travels 630 metres in 15 seconds. The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second. (a) Work out the upper bound and the lower bound of the speed in m/s. (b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.	