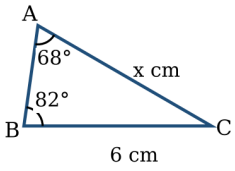
| Day 306 | S Tier 10-a-day |
|---|---|
| **1** The 6th term of an arithmetic sequence is 49. The 9th term of the sequence is 76.<br>(a) Find an expression for the nth term of the sequence.<br>(b) Is 130 a term of the sequence? You must show your working. | |
| **2** Write these numbers in order of size, starting with the smallest.<br>83%, $\frac{8}{15}$, $\frac{5}{8}$, $\frac{2}{3}$ | |
| **3** Here are five numbers: 2x + 2, 2, 5, 2x + 6, 3x. The mean of the five numbers is 10.<br>(a) Work out the value of x.<br>(b) Work out the median of the five numbers. | |
| **4** The diagram shows triangle ABC. (Calculator) Work out the length of AC. Give your answer correct to 1 decimal place.<br>The diagram is not drawn accurately.<br> | |
| **5** A is directly proportional to the square root of r. When r = 4, A = 16.<br>(a) Find a formula for A in terms of r.<br>(b) Work out the value of A when r = 16. | |

| Day 306 | S Tier 10-a-day |
|---|---|
| **6** (a) Show that the equation $x^3 + x - 14 = 0$ has a solution between x = 2 and x = 3.<br>(b) Show that the equation can be rearranged to give $x = \sqrt[3]{14 - x}$ | |
| **7** A plane leaves an airport P and travels 44 km on a bearing of 045° to Q. (Calculator)<br>It then travels 104 km on a bearing of 015° to R.<br>(a) Work out the distance PR.<br>(b) Work out the bearing of R from P.<br>Give distances to 1 decimal place and the bearing to the nearest degree. | |
| **8** A retailer buys a guitar and adds a 30% mark-up to get the selling price.<br>In a sale the selling price is reduced by 15% to £430.95.<br>Work out how much the shop paid for a guitar. | |
| **9** y is inversely proportional to the square root of x.<br>When x = 25, y = 4.<br>Find the positive value of x when y = 5. | |
| **10** $N = 2 \times 3^4 \times 7$<br>How many factors does N have?<br>Include 1 and N. | |