Day 60 **B Tier 10-a-day**

1 A boat travels on a bearing of 270°.
It then turns right through 50° and continues in a straight line.
Work out the new bearing.

2 A triangle has sides of length x cm, (x + 3) cm and (2x − 2) cm.
The perimeter of the triangle is 29 cm.
(a) Work out the value of x.
(b) Work out the length of the longest side.

3 $\mathbf{a} = \begin{pmatrix} -1 \\ 3 \end{pmatrix}$ $\mathbf{b} = \begin{pmatrix} -2 \\ 4 \end{pmatrix}$
Work out
(a) $2\mathbf{a} + \mathbf{b}$
(b) $3\mathbf{a} - 2\mathbf{b}$

4 The point (1, k) lies on the line $y = 2x - 3$
Work out the value of k.

5 The table shows the shoe sizes of students in a class.
Work out the mean.

Shoe size	**5**	**6**	**7**	**8**	**9**
Frequency	7	2	4	6	5

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6 Write each number as an ordinary number. (a) 6.6×10^{6} (b) 4.8×10^{-4}	
7 A cylinder has radius 2 cm and height 13 cm. It is open at one end (no lid). Work out the total outside surface area. Give your answer in terms of π.	
8 £2,500 is invested for 2 years at 5% compound interest per year. (Calculator) Work out the total interest earned.	
9 Work out (a) $\frac{1}{10} + \frac{1}{4}$ (b) $\frac{11}{12} - \frac{7}{8}$ Give each answer in its simplest form.	
10 A plumber charges a call-out fee plus a cost for each hour of work. The graph shows the total cost. (a) Write down the fixed charge. (b) Work out the cost for each hour.  	