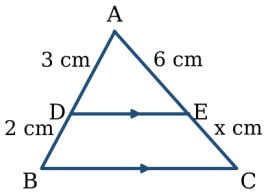
| Day 104 | A Tier 10-a-day |
|---|---|
| **1** (a) Write 93494 correct to 2 significant figures.<br>(b) Write 5.8035 correct to 1 decimal place. | |
| **2** Two fair dice are thrown.<br>The two scores are added together.<br>Work out the probability that the sum is 7. | |
| **3** Here are the first four terms of a sequence.<br>9, 14, 19, 24<br>(a) Find an expression for the nth term.<br>(b) Is 104 a term of this sequence? You must show your working. | |
| **4** A tank is in the shape of a cuboid measuring 120 cm by 50 cm by 40 cm.<br>It already contains 100 litres of water.<br>Water flows in at 5 litres per minute until the tank is full.<br>Work out how long this takes. Give your answer in minutes. | |
| **5** Here are four fractions: $\frac{7}{12}$ $\frac{27}{60}$ $\frac{8}{10}$ $\frac{21}{24}$<br>Which one of these fractions is equal to a recurring decimal? | |

**Day 104** **A Tier 10-a-day**

**6** In triangle ABC, DE is parallel to BC.
D is on AB and E is on AC.
Work out the value of x.
The diagram is not drawn accurately.




**7** y is inversely proportional to the square of x.
When x = 1, y = 36.
(a) Find a formula for y in terms of x.
(b) Work out the value of y when x = 6.

**8** A plane leaves an airport and travels 9 km on a bearing of 070°. (Calculator)
It then travels 12 km on a bearing of 160°.
(a) Work out how far it is now from the airport.
(b) Work out the bearing of its final position from the airport. Give your answer to the nearest degree.

**9** Rationalise the denominator of $\frac{8}{3+\sqrt{7}}$

Give your answer in the form $a + b\sqrt{c}$ where a and b are integers.

**10** A bag contains 5 red counters and 2 blue counters.
Three counters are taken at random without replacement.
Work out the probability that exactly one of the three counters is blue.