**Day 4** **A Tier 10-a-day**

**1** The frequency table shows data for 33 matches.
(a) Find the median.
(b) Work out the range.

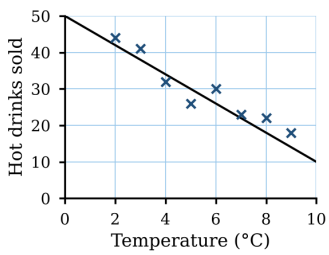
| Goals scored | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| Frequency | 5 | 8 | 7 | 4 | 9 |

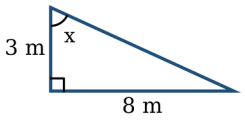
**2** (a) Factorise $25y^2 - 4z^2$
(b) Use the same idea to work out $185^2 - 15^2$ without a calculator.

**3** Owen earns £29000 a year.
She pays no tax on the first £15000.
She pays 25% tax on the rest.
Work out how much tax she pays in a year.

**4** Ryan's salary increases by 10%. (Calculator)
Her new salary is £242.
Work out her salary before the increase.

**5** The scatter graph shows the temperature and the number of hot drinks sold on some days.
A line of best fit is drawn.
(a) Describe the correlation.
(b) Estimate the number of hot drinks sold on a day when the temperature is 4 °C.



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|---|---|
| **6** Work out the size of angle x. (Calculator)<br>Give your answer to 1 decimal place.<br>The diagram is not drawn accurately.<br><br> | |
| **7** Show that $\frac{\sqrt{27}+\sqrt{12}}{\sqrt{3}}$ is an integer, and find its value. | |
| **8** A solid is made from a cylinder and a hemisphere.<br>The cylinder has radius 9 cm and height 10 cm.<br>The hemisphere has the same radius as the cylinder and sits on top of it.<br>Work out the total volume. Give your answer in terms of $\pi$. | |
| **9** L = 7,300 is rounded to the nearest 100.<br>Write down the error interval for L. | |
| **10** Solve the simultaneous equations<br>$x^2 + y^2 = 169$<br>$y = -x + 17$ | |