



REVISE THIS TOPIC



CHECK YOUR ANSWERS



3

The heights of the Year 7 students (x) and Year 10 students (y), in cm, are summarised below.

$$\Sigma y^2 = 235032$$

- (d) Calculate the mean and standard deviation of the heights of all 16 students. **(3)**

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. In the bottom-left corner, there is a small blue decorative element resembling a scalloped-edge tab or a piece of tape. The rest of the page is empty and white.

(Total for Question 3 is 11 marks)

The table below summarises the headteacher's calculations.

Day	Mon	Tues	Weds	Thurs	Fri
Mean	12	12.5	12.6	10.25	23
Standard Deviation	0	1.66	3.04	-2.28	2.55

As maths teacher checks the data and realises that two of the values were calculated incorrectly.

- (a) State which two values were calculated incorrectly. Give reasons for your answers. (2)

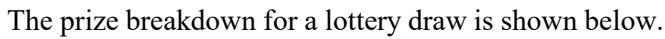
The headteacher also wants to know about the number of detentions being set.

The number of detentions received in a one-month period for 30 Year 10 students (x) and 30 Year 11 students (y) are summarised below.

$$\sum x = 126 \qquad \sum x^2 = 828 \qquad \sum y = 93 \qquad \sum (y - \bar{y})^2 = 392.7$$

- (b) By working out the standard deviation determine which of the year groups had more variation in their number of detentions. (5)





8 The speeds S , to the nearest mph, of 40 cars travelling through a village are shown below.

Vehicle speed (S mph)	Frequency (f)	Midpoint (x mph)
$0 \leq S < 10$	1	5
$10 \leq S < 20$	3	15
$20 \leq S < 30$	31	25
$30 \leq S < 40$	4	35
$40 \leq S < 50$	1	45

You may use $\sum fx = 1010$ and $\sum fx^2 = 27\,000$

- (a) Calculate, to 2 decimal places, an estimate for the mean vehicle speed. **(1)**
- (b) Calculate, to 2 decimal places, an estimate for the standard deviation of the vehicle speeds. **(2)**
- (c) Explain why your answers to parts (a) and (b) are only estimates. **(1)**

It is found that one of the vehicle speeds was incorrectly recorded as 2 mph but was in fact 25 mph.

- (d) Without calculate a new estimates state what effect, if any, using the correct speed will have on
- (i) your estimate for the mean
 - (ii) your estimate for the standard deviation

Give reasons for your answers. (2)

[illegible]

(Total for Question 8 is 6 marks)

