Coding

Why Code?

Before the current A-Level specification allowed for graphing calculators, the more brute force methods of getting values such as mean and standard deviation were not able to be used in the exam. These questions may still come up, but are less prevalent now that you can just put the numbers into your calculator.

Coding allows for far more simple calculations to be used, for example, the sequence below could be coded as $y = \frac{x-1000}{10}$.

1010, 1020, 1030, 1040, 1050

This would allow the standard deviation of the new sequence (below) to be computed far more easily

1, 2, 3, 4, 5

$\sigma_y = \sqrt{2}$
$\sigma_x = 10\sqrt{2}$

Rules of coding

Coding	**Effect on $\bar{x}$**	**Effect on σ**
$y = x + 10$	$\bar{x}$ will similarly increase by 10 (to get $\bar{y}$)	Adding (and subtracting) has no effect on standard deviation or any measure of spread
$y = 3x$	$\bar{x}$ will get 3 times bigger	Standard deviation will get 3 times larger
$y = 2x - 5$	$\bar{y} = 2\bar{x} - 5$, ie. effect on values is same as on mean	-5 has no effect, but standard deviation will get 2x larger