

Mathematics (National 5) USAP 3(a) Homework – Ink Exercise

1. Find the median, the upper and lower quartiles and the interquartile range for:

26 13 25 27 23 23 15 12 20 (5)

2. (a) A quality control examiner on a production line measures the weight in grams of Cakes coming off the line. In a sample of eight cakes the weights were

150 147 148 153 149 143 145 149

Calculate the mean and standard deviation. (5)

- (b) On a second production line, a sample of 8 cakes gives a mean of 149 and a standard deviation of 6.1. Compare the distribution of the cakes produced on the two production lines.

(1)

3. The data below shows the marks gained by seven pupils in two class tests.

Maths	10	35	60	42	24	17	56
Physics	23	57	88	62	40	33	85

- (a) Show the data on a scattergraph and draw the line of best fit. (3)

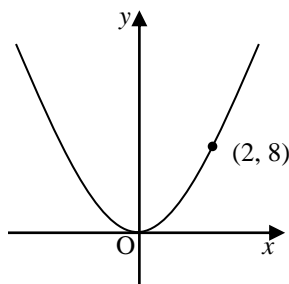
- (b) Find the equation of your line of best fit. (3)

- (c) Use your equation to estimate the Physics mark of a pupil whose Maths mark was 50.

(1)

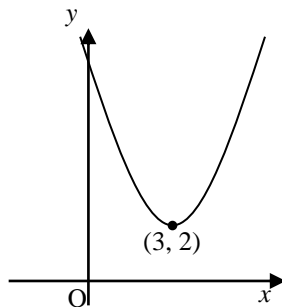
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4. (a) This graph has equation in the form $y = kx^2$. Find the value of k .



(2)

- (b) This graph has equation of the form $y = (x + p)^2 + q$. Write down its equation.



(2)

5. Sketch the graphs of the following showing clearly any intercepts with the axes and the turning point.

(a) $y = (x - 4)(x + 2)$

(b) $y = (x - 5)^2 + 3$

(7)

6. For the quadratic function $y = 3 - (x + \frac{1}{2})^2$, write down

(a) its turning point and the nature of it.

(3)

(b) the equation of the axis of symmetry of the parabola.

(1)

Total – 33 marks