IB Math 1 23B Measures of the Middle

Example

The number of faulty products returned to an electrical goods store over a 21 day period is: 3, 4, 4, 9, 8, 8, 6, 4, 7, 9, 1, 3, 5, 3, 5, 9, 8, 6, 3, 7, 1

For this data set, find the:

a. mean sum : 113 mean = $\frac{113}{21} \approx 5.38$ faulty products

b. median 1, 1, 3, 3, 3, 3, 4, 4, 4, 5 | 5, 6, 6, 7, 7, 8, 8, 8, 9, 9, 9 (10 | 10) ↑ median

c. mode ↑ most common 3 faulty products

d. 9 faulty products are returned on day 22.
How does this affect the measures of the middle?

mean : $\frac{113+9}{22} = \frac{122}{22} \approx 5.55$ faulty products

1, 1, 3, 3, 3, 3, 4, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 8, 9, 9, 9, 9 (10 | 10) Bimodal

Median: $\frac{5+6}{2} = 5.5$ faulty products

Mode: 3, 9

e. After day 23, the mean number of faulty products returned is approximately 5.652. How many faulty products were returned on day 23?

Method 1 $\frac{x}{23} = 5.652$

$x = 129.996$

$x \approx 130$

$130 - 122 = 8$ faulty products

Method 2 $\frac{122+a}{23} = 5.652$

$a = 8$ faulty products

23B.1 (1, 5, 8-11, 13-15)