Answer on Question #46503 – Math – Statistics and Probability

Problem.

Following are the marks obtained by 49 students in Maths paper in a class with minimum marks 50:

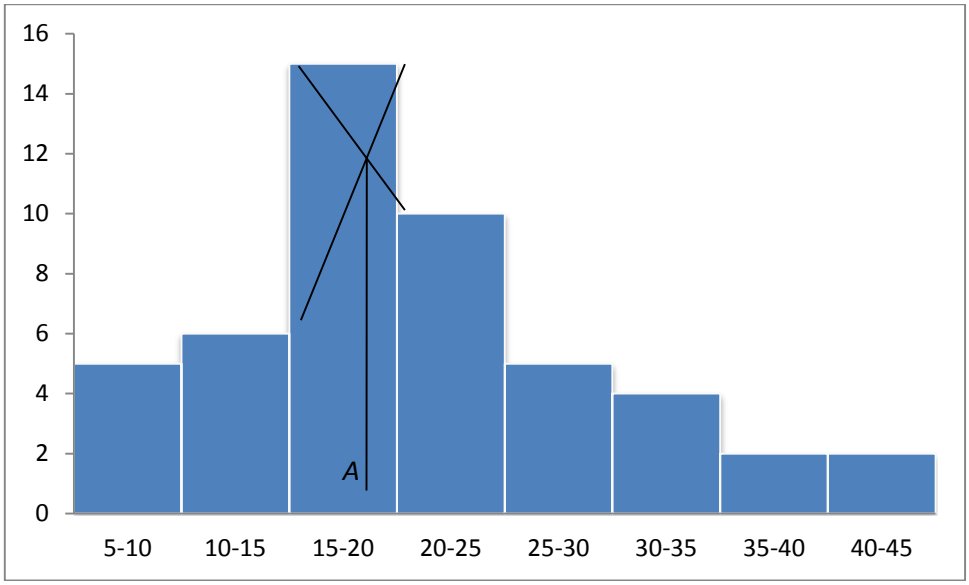
Mark

Group 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45

Frequency 5 6 15 10 5 4 2 2

Draw a histogram of marks obtained and find the mode from the histogram.

Solution:



To find mode, we should:

- Identify the tallest bar. This represents the modal class.
- Join the tips of this bar to those of the neighbouring bars on either side, with the one on the left joined to that on the right and vice-versa. The lines used to join these tips cross each other at some point in this bar.
- Drop a perpendicular line from the tip of the point where these lines meet to the base of the bar (horizontal axis). The point where it meets the base is the mode.

Then the mode is point A and the mode is $15 + \frac{15-6}{2 \cdot 15-6-10} \cdot 3 = 15 + \frac{27}{14} = 16\frac{13}{14}$.

Answer: $16\frac{13}{14}$.