

CBSE CLASS X
Mathematics Standard (041)

QUESTION PAPER

From previous CBSE Board Exam questions

Code: PJ1OH2**Questions: 61****Maximum Marks: 165****Generated: 2026-06-15 13:05****SELECTIONS USED**

Source	Previous-year board
Subject	Mathematics
Lessons	Statistics
Year	2022-2026
Questions selected	61

Composition — Types: 25 MCQ · 16 Long · 11 Short · 6 Case-based · 2 Very short · 1 Assertion–reason

Q1. § 13.2 Mean of Grouped Data**[1]**

For some data $x_1, x_2, \dots, x_n$ with respective frequencies $f_1, f_2, \dots, f_n$, the value of $\sum_1^n f_i(x_i - \bar{x})$ is equal to :

- (a) $n\bar{x}$
- (b) 1
- (c) $\sum f_i$
- (d) 0

Previously asked in: 2024 30/1/1 Q9

◆ **Statistics**

13.2 Mean of Grouped Data

Q2. § 13.1 Introduction § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data**[5]**

The mean of the following frequency distribution is 28. If sum of all frequencies is 100, then find the values of p and q :

Previously asked in: 2026 30/5/1 Q34(a) (OR-1)

◆ **Statistics**

13.2 Mean of Grouped Data

Q3. § 13.5 Summary**[1]**

While calculating mean of a grouped frequency distribution, step deviation method was used ($\frac{x-a}{h} = u$). It was found that $\bar{x} = 64$, $h = 5$ and $a = 62.5$. The value of $\bar{u}$ is

- (A) 0.5
- (B) 1.5
- (C) 0.3
- (D) 7.5

Previously asked in: 2026 30/5/1 Q6

◆ **Statistics**

13.2 Mean of Grouped Data

Q4. § 13.2 Mean of Grouped Data**[3]**

Find the mean of the following data using assumed mean method :

Previously asked in: 2022 30/2/1 Q9(b)

◆ **Statistics**

13.2 Mean of Grouped Data

Q5. § 13.2 Mean of Grouped Data**[3]**

The mean of the following frequency distribution is 25. Find the value of f .

Previously asked in: 2022 30/2/1 Q9(a)

◆ Statistics

13.2 Mean of Grouped Data

Q6. § 13.2 Mean of Grouped Data**[1]**

If the value of each observation of a statistical data is increased by 3, then the mean of the data

- A remains unchanged
- B increases by 3
- C increases by 6
- D increases by $3n$

Previously asked in: 2023 30/1/1 Q15

◆ Statistics

13.2 Mean of Grouped Data

Q7. § 13.2 Mean of Grouped Data**[5]**

The mean of the following frequency distribution is 35. Find the values of x and y , if the sum of frequencies is 25 :

Previously asked in: 2026 30/1/1 Q35

◆ Statistics

13.2 Mean of Grouped Data

Q8. § 13.2 Mean of Grouped Data**[3]**

The weights (in kg) of 50 wild animals of a National Park were recorded and the following data was obtained. Find the mean weight (in kg) of animals, using assumed mean method.

Previously asked in: 2022 30/3/1 Q9

◆ Statistics

13.2 Mean of Grouped Data

Q9. § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data**[3]**

Following is the daily expenditure on lunch by 30 employees of a company. Find the mean daily expenditure of the employees.

Previously asked in: 2022 30/1/1 Q10

◆ Statistics

13.2 Mean of Grouped Data

Q10. § 13.1 Introduction § 13.2 Mean of Grouped Data**[3]**

Find the mean of the following frequency distribution :

Previously asked in: 2023 30/5/1 Q31; 2022 30/4/1 Q4 – 2×

◆ Statistics

13.2 Mean of Grouped Data

Q11. § 13.2 Mean of Grouped Data**[1]**

If every term of the statistical data consisting of n terms is decreased by 2, then the mean of the data :

- (a) decreases by 2
- (b) remains unchanged
- (c) decreases by $2n$
- (d) decreases by 1

Previously asked in: 2023 30/5/1 Q18

◆ Statistics

13.2 Mean of Grouped Data

Q12. § 13.2 Mean of Grouped Data

[1]

For the data 2, 9, $x + 6$, $2x + 3$, 5, 10, 5; if the mean is 7, then the value of x is :

- A 9
- B 6
- C 5
- D 3

Previously asked in: 2024 30/5/1 Q6

♦ Statistics

13.2 Mean of Grouped Data

Q13. § 13.2 Mean of Grouped Data

[1]

The mean of five observations is 15. If the mean of first three observations is 14 and that of the last three observations is 17, then the third observation is

- A 20
- B 19
- C 18
- D 17

Previously asked in: 2024 30/3/1 Q16

♦ Statistics

13.2 Mean of Grouped Data

Q14. § 13.4 Median of Grouped Data

[3]

In a test, the marks obtained by 100 students (out of 50) are given below:

Marks obtained	0–10	10–20	20–30	30–40	40–50
Frequency	12	23	34	25	6

Find the mean marks of the students.

Previously asked in: 2024 30/2/1 Q30

♦ Statistics

13.2 Mean of Grouped Data

Q15. § 13.2 Mean of Grouped Data

[1]

If the mean of 2, 9, $x + 6$, $2x + 3$, 5, 10, 5 is 7, then the value of x is:

- A 9
- B 6
- C 5
- D 3

Previously asked in: 2025 30/3/1 Q15

♦ Statistics

13.2 Mean of Grouped Data

Q16. § 13.1 Introduction § 13.3 Mode of Grouped Data § 13.5 Summary

[2]

The mode of a grouped frequency distribution is 75 and the modal class is 65–80. The frequency of the class preceding the modal class is 6 and the frequency of the class succeeding the modal class is 8. Find the frequency of the modal class.

Previously asked in: 2022 30/4/1 Q1

♦ Statistics

13.3 Mode of Grouped Data

Q17. § 13.3 Mode of Grouped Data § 13.5 Summary**[2]**

If mode of the following frequency distribution is 55, then find the value of x .

Previously asked in: 2022 30/2/1 Q5

♦ **Statistics**

13.3 Mode of Grouped Data

Q18. § 13.2 Mean of Grouped Data § 13.3 Mode of Grouped Data**[5]**

250 apples of a box were weighed and the distribution of masses of the apples is given in the following table:

(i) Find the value of x and the mean mass of the apples. [3]

(ii) Find the modal mass of the apples. [2]

Previously asked in: 2023 30/6/1 Q35

♦ **Statistics**

13.2 Mean of Grouped Data

13.4 Mode of Grouped Data

Q19. § 13.4 Median of Grouped Data**[1]**

The distribution below gives the marks obtained by 80 students on a test. The modal class of this distribution is :

A 10 – 20

B 20 – 30

C 30 – 40

D 50 – 60

Previously asked in: 2023 30/1/1 Q11

♦ **Statistics**

Modal Class in Frequency Distribution

Q20. § 13.4 Median of Grouped Data**[1]**

If the maximum number of students has obtained 52 marks out of 80, then

A 52 is the mean of the data.

B 52 is the median of the data.

C 52 is the mode of the data.

D 52 is the range of the data.

Previously asked in: 2025 30/6/1 Q16

♦ **Statistics**

Mode of Grouped Data

Q21. § 13.1 Introduction § 13.2 Mean of Grouped Data § 13.3 Mode of Grouped Data**[5]**

The following table shows the number of patients of different age group who were discharged from the hospital in a particular month :

Find the 'mean' and the 'mode' of the above data.

Previously asked in: 2025 30/4/1 Q35

♦ **Statistics**

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

Q22. § 13.3 Mode of Grouped Data**[2]**

Find the mode of the given frequency distribution:

Previously asked in: 2022 30/3/1 Q3

♦ **Statistics**

13.3 Mode of Grouped Data

Q23. § 13.3 Mode of Grouped Data

[2]

Find the mode of the following frequency distribution:

Previously asked in: 2022 30/1/1 Q4

◆ Statistics

13.3 Mode of Grouped Data

Q24. § 13.2 Mean of Grouped Data § 13.3 Mode of Grouped Data § 13.5 Summary

[5]

The following table shows the ages of the patients admitted in a hospital during a year. Find the mode and mean of the data given above.

Previously asked in: 2024 30/4/1 Q35

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

Q25. § 13.4 Median of Grouped Data

[1]

After an examination, a teacher wants to know the marks obtained by maximum number of the students in her class. She requires to calculate _____ of marks.

- (A) median
- (B) mode
- (C) mean
- (D) range

Previously asked in: 2024 30/2/1 Q18

◆ Statistics

Mode

Q26. § 13.1 Introduction § 13.3 Mode of Grouped Data § 13.5 Summary

[5]

Find the Mean and Mode of the following frequency distribution :

Previously asked in: 2025 30/2/1 Q35

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

Q27. § 13.2 Mean of Grouped Data § 13.3 Mode of Grouped Data § 13.5 Summary

[5]

Find the missing frequency f in the following table, if the mean of the given data is 18. Hence find the mode.

Previously asked in: 2025 30/1/1 Q35

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

Q28. § 13.1 Introduction § 13.3 Mode of Grouped Data § 13.5 Summary

[5]

Find mean and mode of the following distribution:

Previously asked in: 2026 30/4/1 Q35 (OR-2); 2026 30/3/1 Q32(b) — 2×

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

Q29. § 13.1 Introduction § 13.5 Summary

[1]

Mean and Median of a frequency distribution are 43 and 40 respectively. The value of mode is

- A 34
- B 43
- C 38.5
- D 41.5

Previously asked in: 2026 30/4/1 Q18

◆ Statistics

13.3 Mode of Grouped Data

Q30. § 13.4 Median of Grouped Data**[4]**

BINGO is game of chance. The host has 75 balls numbered 1 through 75. Each player has a BINGO card with some numbers written on it. The participant cancels the number on the card when called out a number written on the ball selected at random. Whosoever cancels all the numbers on his/her card, says BINGO and wins the game. The table given below, shows the data of one such game where 48 balls were used before Tara said 'BINGO'.

Based on the above information, answer the following :

- (i) Write the median class. [1]
- (ii) When first ball was picked up, what was the probability of calling out an even number ? [1]
- (iii) Find median of the given data. [2]

Previously asked in: 2024 30/1/1 Q37

◆ **Statistics**

13.4 Median of Grouped Data

14.1 Probability — A Theoretical Approach

Q31. § 13.1 Introduction § 13.3 Mode of Grouped Data § 13.4 Median of Grouped Data**[1]**

The middle most observation of every data arranged in order is called :

- (a) mode
- (b) median
- (c) mean
- (d) deviation

Previously asked in: 2024 30/1/1 Q14

◆ **Statistics**

13.4 Median of Grouped Data

Q32. § 13.1 Introduction § 13.3 Mode of Grouped Data § 13.4 Median of Grouped Data**[5]**

Find median and mode of the following distribution:

Previously asked in: 2026 30/5/1 Q34(b) (OR-2)

◆ **Statistics**

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q33.**[4]**

Yoga is an ancient practice which is a form of meditation and exercise. By practising yoga, we not even make our body healthy but also achieve inner peace and calmness. The International Yoga Day is celebrated on 21st of June every year since 2015.

To promote Yoga, Green park society in Pune organised a 7-day Yoga camp in their society. The number of people of different age groups who enrolled for this camp is given as follows :

Based on the above, find the following :

- (a) Find the median age of people enrolled for the camp. [2]
- (b) If x more people of age group 65 – 75 had enrolled for the camp, the mean age would have been 58. Find the value of x . [2]

Previously asked in: 2022 30/4/1 Q13

◆ **Statistics**

13.2 Mean of Grouped Data

13.4 Median of Grouped Data

Q34. § 13.4 Median of Grouped Data

[3]

Heights of 50 students of class X of a school are recorded and following data is obtained : Find the median height of the students.

Previously asked in: 2022 30/2/1 Q10

◆ Statistics

13.4 Median of Grouped Data

Q35. § 13.1 Introduction § 13.3 Mode of Grouped Data § 13.4 Median of Grouped Data

[4]

India meteorological department observes seasonal and annual rainfall every year in different sub-divisions of our country. It helps them to compare and analyse the results. The table given below shows sub-division wise seasonal (monsoon) rainfall (mm) in 2018 :

Based on the above information, answer the following questions.

(I) Write the modal class. [1]

(II) Find the median of the given data. [2]

(III) If sub-division having at least 1000 mm rainfall during monsoon season, is considered good rainfall sub-division, then how many sub-divisions had good rainfall ? [1]

Previously asked in: 2023 30/1/1 Q37

◆ Statistics

13.4 Median of Grouped Data

Interpretation of Cumulative Frequency / Reading Frequency Tables

Modal Class of Grouped Data

Q36. § 13.4 Median of Grouped Data

[5]

Following distribution shows the marks of 230 students in a particular subject. If the median marks are 46, then find the values of x and y .

Previously asked in: 2025 30/6/1 Q35

◆ Statistics

13.4 Median of Grouped Data

Q37. § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data

[1]

If the mode of some observations is 10 and sum of mean and median is 25, then the mean and median respectively are

A 12 and 13

B 13 and 12

C 10 and 15

D 15 and 10

Previously asked in: 2025 30/6/1 Q15

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q38. § 13.4 Median of Grouped Data

[5]

Medical check-up was carried out for 35 students of a class and their weights were recorded as follows : Find the difference between the mean weight and the median weight.

Previously asked in: 2025 30/5/1 Q35

◆ Statistics

13.2 Mean of Grouped Data

13.4 Median of Grouped Data

Q39. § 13.4 Median of Grouped Data

[1]

Following data shows the marks obtained by 100 students in a class test : The median will be the average of which two observations ?

- A 29 and 33
- B 25 and 28
- C 28 and 29
- D 33 and 38

Previously asked in: 2025 30/5/1 Q17

◆ Statistics

13.4 Median of Grouped Data

Q40. § 13.1 Introduction § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data

[1]

If x median + y mean = z mode; is the empirical relationship between mean, median and mode, then the value of $x + y + z$ is

- A 6
- B 3
- C 2
- D 1

Previously asked in: 2025 30/5/1 Q16

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Empirical Relationship between Mean, Median and Mode

Q41. § 13.3 Mode of Grouped Data § 13.4 Median of Grouped Data § 13.5 Summary

[1]

If mean and median of given set of observations are 10 and 11 respectively, then the value of mode is :

- (a) 10.5
- (b) 8
- (c) 13
- (d) 21

Previously asked in: 2025 30/4/1 Q13

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q42. § 13.1 Introduction § 13.4 Median of Grouped Data

[1]

The cumulative frequency for calculating median is obtained by adding the frequencies of all the :

- (a) classes up to the median class
- (b) classes following the median class
- (c) classes preceding the median class
- (d) all classes

Previously asked in: 2025 30/4/1 Q12

◆ Statistics

13.4 Median of Grouped Data

Q43. § 13.1 Introduction § 13.4 Median of Grouped Data

[5]

The median of the following data is 137. Find the values of x and y , given that total of frequencies is 68.

Previously asked in: 2026 30/3/1 Q32(a)

◆ Statistics

13.4 Median of Grouped Data

Q44. § 13.1 Introduction § 13.4 Median of Grouped Data**[1]**

The median and mode of a distribution are 25.2 and 26.1 respectively. The mean of the distribution is :

- A 24.75
- B 24.25
- C 24.3
- D 25.5

Previously asked in: 2026 30/3/1 Q16

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q45.**[5]**

An SBI health insurance agent found the following data for distribution of ages of 100 policy holders. The health insurance policies are given to persons of age 15 years and onwards, but less than 60 years. Find the modal age and median age of the policy holders.

Previously asked in: 2026 30/2/1 Q35

◆ Statistics

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q46. § 13.1 Introduction**[1]**

The mean and median of a frequency distribution are 43 and 43.4 respectively. The mode of the distribution is :

- A 43.4
- B 42.4
- C 44.2
- D 49.3

Previously asked in: 2026 30/2/1 Q17

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Empirical Relationship: Mode = 3·Median – 2·Mean

Q47. § 13.4 Median of Grouped Data**[1]**

If the mean and mode of a data are 12 and 21 respectively, then its median is :

- (a) 6
- (b) 13.5
- (c) 15
- (d) 14

Previously asked in: 2026 30/1/1 Q17

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q48. § 13.1 Introduction § 13.4 Median of Grouped Data**[3]**

For the following frequency distribution, find the median:

Previously asked in: 2022 30/3/1 Q10

◆ Statistics

13.4 Median of Grouped Data

Q49. § 13.4 Median of Grouped Data**[3]**

For what value of x , is the median of the following frequency distribution 34.5?

Previously asked in: 2022 30/1/1 Q7

◆ Statistics

13.4 Median of Grouped Data

Q50. § 13.3 Mode of Grouped Data § 13.4 Median of Grouped Data § 13.5 Summary**[1]**

If the mean and the median of a data are 12 and 15 respectively, then its mode is :

- (a) $13 \cdot 5$
- (b) 21
- (c) 6
- (d) 14

Previously asked in: 2023 30/5/1 Q10

◆ **Statistics**

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q51. § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data**[5]**

The monthly expenditure on milk in 200 families of a Housing Society is given below :

Find the value of x and also, find the median and mean expenditure on milk.

Previously asked in: 2023 30/4/1 Q35

◆ **Statistics**

13.2 Mean of Grouped Data

13.4 Median of Grouped Data

Finding the unknown frequency (x) using total frequency condition**Q52.** § 13.1 Introduction**[1]**

The empirical relation between the mode, median and mean of a distribution is :

- (a) Mode = 3 Median – 2 Mean
- (b) Mode = 3 Mean – 2 Median
- (c) Mode = 2 Median – 3 Mean
- (d) Mode = 2 Mean – 3 Median

Previously asked in: 2023 30/4/1 Q6

◆ **Statistics**

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q53. § 13.4 Median of Grouped Data**[5]**

A student noted the number of cars passing through a spot on a road for 100 periods each of 3 minutes and summarised it in the table given below. Find the mean and median of the following data.

Previously asked in: 2023 30/2/1 Q34

◆ **Statistics**

13.2 Mean of Grouped Data

13.4 Median of Grouped Data

Q54. § 13.4 Median of Grouped Data**[4]**

Activities like running or cycling reduce stress and the risk of mental disorders like depression. Running helps build endurance. Children develop stronger bones and muscles and are less prone to gain weight. The physical education teacher of a school has decided to conduct an inter school running tournament in his school premises. The time taken by a group of students to run 100 m, was noted as follows :

Time (in seconds): 0–20, 20–40, 40–60, 60–80, 80–100

Number of students: 8, 10, 13, 6, 3

Based on the above, answer the following questions :

- (i) What is the median class of the above given data? [1]
- (ii) Find the mean time taken by the students to finish the race, OR find the mode of the above given data. [2]
- (iii) How many students took time less than 60 seconds? [1]

Previously asked in: 2024 30/5/1 Q38

◆ **Statistics**

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Cumulative Frequency and Less Than Type

Q55. § 13.4 Median of Grouped Data**[1]**

If the difference of mode and median of a data is 24, then the difference of its median and mean is :

- A 12
- B 24
- C 8
- D 36

Previously asked in: 2024 30/4/1 Q7

◆ **Statistics**

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q56. § 13.4 Median of Grouped Data**[4]**

Vocational training complements traditional education by providing practical skills and hands-on experience. While education equips individuals with a broad knowledge base, vocational training focuses on job-specific skills, enhancing employability thus making the student self-reliant. Keeping this in view, a teacher made the following table giving the frequency distribution of students/adults undergoing vocational training from the training institute.

From the above answer the following questions :

- (i) What is the lower limit of the modal class of the above data ? [1]
- (ii) Find the median class of the above data. [2]
- (iii) Give the empirical relationship between mean, median and mode. [1]

Previously asked in: 2024 30/3/1 Q37

◆ **Statistics**

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q57. § 13.4 Median of Grouped Data

[1]

If value of each observation in a data is increased by 2, then median of the new data

- (A) increases by 2
- (B) increases by $2n$
- (C) remains same
- (D) decreases by 2

Previously asked in: 2024 30/2/1 Q12

◆ Statistics

13.4 Median of Grouped Data

Q58. § 13.1 Introduction § 13.4 Median of Grouped Data

[4]

The India Meteorological Department observes seasonal and annual rainfall every year in different sub-divisions of our country. It helps them to compare and analyse the results.

The table below shows sub-divisions wise seasonal (monsoon) rainfall (in mm) in 2023.

Based on the information given above, answer the following questions:

- (i) Write the modal class. [1]
- (ii) Find the median or mean of the given data. [2]
- (iii) If a sub-division having at least 800 mm rainfall during monsoon season is considered a good rainfall sub-division, then how many sub-divisions had good rainfall? [1]

Previously asked in: 2025 30/3/1 Q38

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Reading and Interpreting Frequency Distribution Tables

Q59. § 13.4 Median of Grouped Data

[1]

Mode and Mean of a data are $15x$ and $18x$, respectively. Then the median of the data is:

- A x
- B $11x$
- C $17x$
- D $34x$

Previously asked in: 2025 30/1/1 Q12

◆ Statistics

13.2 Mean of Grouped Data

13.3 Mode of Grouped Data

13.4 Median of Grouped Data

Q60. § 13.4 Median of Grouped Data

[5]

The median of the following data is 50 and sum of all frequencies is 90. Find the values of p and q .

Previously asked in: 2026 30/4/1 Q35 (OR-1)

◆ Statistics

13.4 Median of Grouped Data

Q61. § STATISTICS § 13.2 Mean of Grouped Data § 13.4 Median of Grouped Data

[1]

Assertion (A) : The mean of first 'n' natural numbers is $\frac{n+1}{2}$.Reason (R): The sum of first 'n' natural numbers is $\frac{n(n+1)}{2}$.

Select the correct answer from the options (A), (B), (C) and (D).

A Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of the Assertion (A).

B Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of the Assertion (A).

C Assertion (A) is true, but Reason (R) is false.

D Assertion (A) is false, but Reason (R) is true.

Previously asked in: 2026 30/2/1 Q20

◆ Statistics

13.2 Mean of Grouped Data

5.4 Sum of First n Terms of an AP

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