CREST

olympiads

#CRESTInnovator

CREST Mathematics Olympiad (CMO)
Worksheet *for*

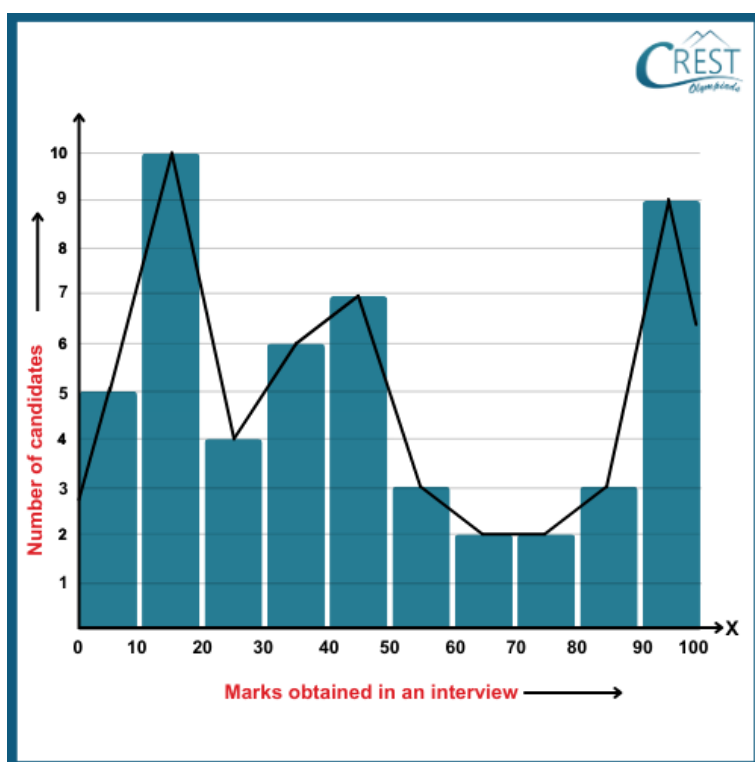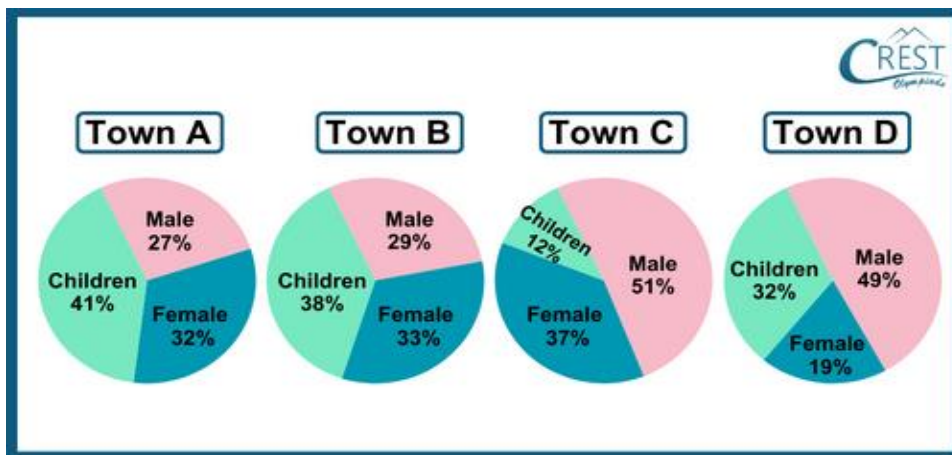## Class 9

Worksheet on Statistics

1. The mean of 55 observations was 280. It was detected on rechecking that the value of 235 was wrongly copied as 265 for computation of mean. What is the correct median if mode is 282?

   a. 279.3
   b. 280.3
   c. 281.3
   d. 282.3

2. In the given figure, a histogram and a frequency polygon graph are drawn on the same scale. The graph provides information about the marks acquired by the number of candidates in the first round of interviews.

   What per cent of the number of candidates whose class mark is 45 is the number of candidates whose class mark is 85?
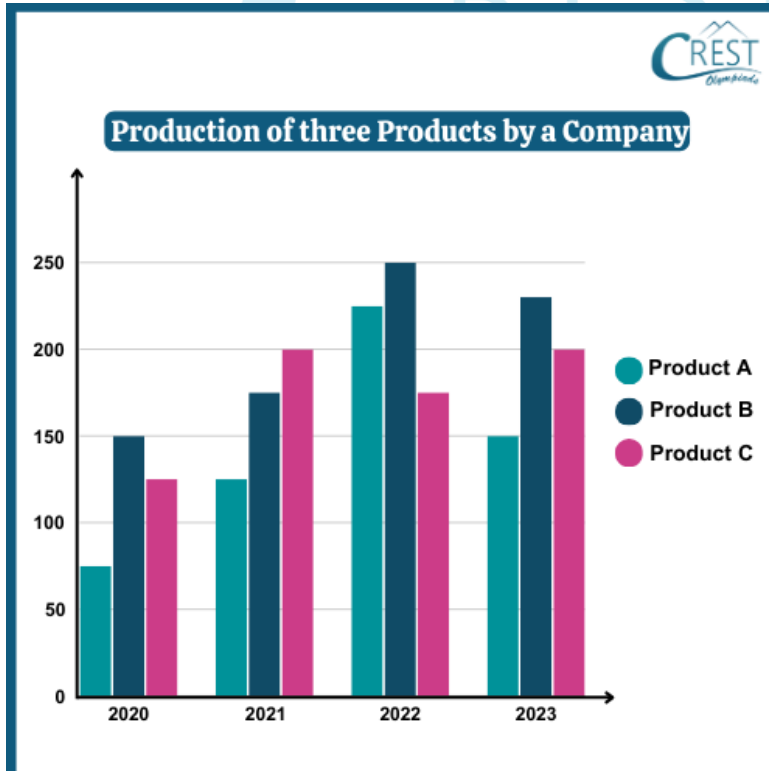
   a. 47.07%
   b. 47.14%
   c. 57.07%
   d. 57.14%

3. The pie charts provide information regarding males, females and children in various towns - A, B, C and D. Each town has an equal population which is ten thousand.

What is the ratio between the number of males in towns A, B and D and the total number of females and children in town C?
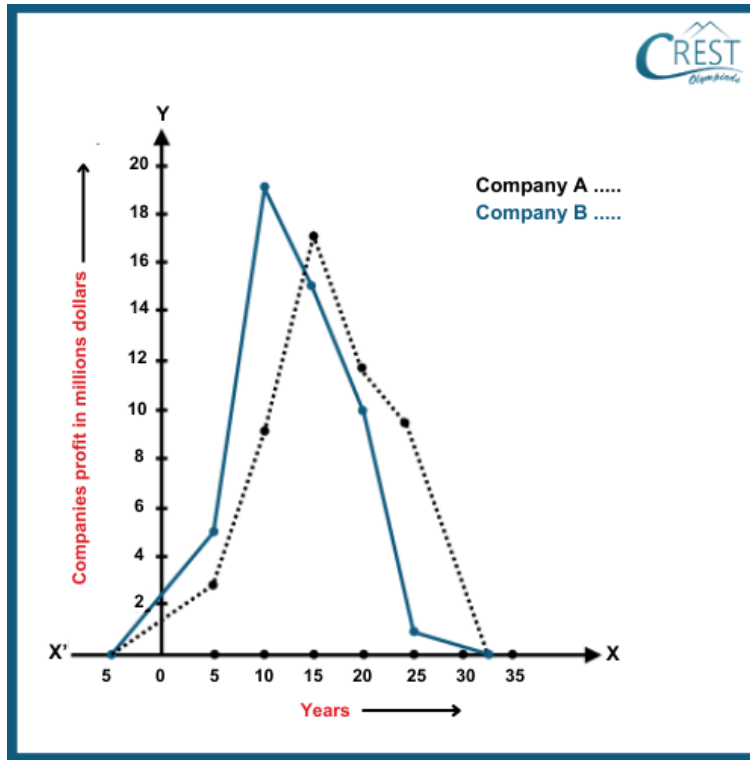
a. 7:15
b. 7:17
c. 15:7
d. 15:17

4. The bar graph gives information about the production of products A, B and C in tons by a company for four years.

What is the average production of all products from 2020 to 2023?

a. 525 tons
b. 575.36 tons
c. 625 tons
d. 691.67 tons

5. **The graph shows the profits of companies A and B for every five years.**

How much extra profit has been earned by both companies A and B compared to 958247.38 dollars?

a. 9.04 million dollars
b. 9.904 million dollars
c. 99.04 million dollars
d. 109.04 million dollars

Answer Key

1. b - 280.3

Explanation: Mean of 55 observations = 280
⇒ Sum of observations/Number of observations = 280
⇒ Sum of observations/55 = 280
⇒ Sum of observations = 280 × 55
∴ Sum of observations = 15400
It was detected on rechecking that the value of 235 was wrongly copied as 265 for computation of mean.
Correct sum of observations = 15400 − 265 + 235
= 15370
Correct Mean = Correct sum of observations/Number of observations
= 15370/55
= 279.45
Median = ⅓ (Mode + 2 × Mean)
= ⅓ (Mode + 2 × 279.45)
= ⅓ (282 + 558.9)
= ⅓ × (840.9)
= 280.3

2. d - 57.14%

Explanation: Number of candidates whose class mark is 45 (lie in the interval 40-50) = 7
Number of candidates whose class mark is 85 (lie in the interval 80-90) = 3
Let percentage be x%.
Percentage of the number of candidates whose class mark is 45 and the number of candidates whose class mark is 85.
⇒ x% of Number of candidates whose class mark is 45 = Number of candidates whose class mark is 85
⇒ x% of 7 = 4
⇒ x/100 × 7 = 4
⇒ x = 4 × 100/7
∴ x = 57.14%

3. c - 15:7

Explanation: Number of males in towns A = 27% × 10000 = 2700
Number of males in towns B = 29% × 10000 = 2900
Number of males in towns D = 49% × 10000 = 4900
Total number of males in towns A, B and D = 2700 + 2900 + 4900 = 10500
Total number of females and children in town C = (37 + 12)% × 10000 = 4900
Ratio between the number of males in towns A, B and D and the total number of females and children in town C = 10500:4900 = 15:7

4. d - 691.67 tons

Explanation: Production of product A from 2020 to 2023 = 75 + 125 + 225 + 150 = 575 tons
Production of product B from 2020 to 2023 = 150 + 175 + 250 + 225 = 800 tons
Production of product C from 2020 to 2023 = 125 + 200 + 175 + 200 = 700 tons
Total production of product A, B and C from 2020 to 2023
= 575 + 800 + 700 = 2025 tons
Average production of all products from 2020 to 2023
= Total production of product A, B and C/Number of products
= 2075/3
= 691.67 tons

5. c - 99.04 million dollars

Explanation: Total profit of company A = 3 + 9 + 17 + 12 + 9 = 50 million dollars
Total profit of company B = 5 + 19 + 15 + 10 + 1 = 50 million dollars
Total profit made by companies A and B = 50 + 50
= 100 million dollars
= 100 × 1000000 dollars [1 million dollars = 1000000 dollars]
= 100000000 dollars
Extra profit has been earned by both companies A and B compared to 958247.38 dollars =
100000000− 958247.38
= 99041752.62 dollars
= (99041752.62 ÷ 1000000) dollars
= 99.04175262 million dollars
= 99.04 million dollars

More Questions Coming Soon – Keep Learning!

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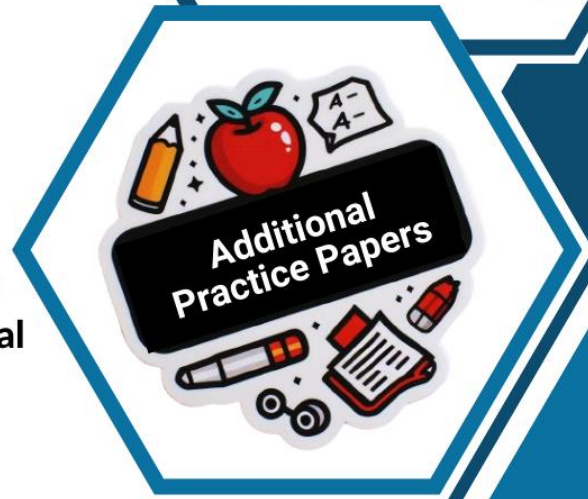2. Go to Dashboard -> Additional Practice -> Buy

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