30 statistics practice questions

Notes for SHS • Topic 75 • All example student data are synthetic.

Question 1 — Level 1: Definition

What does an arithmetic mean tell us?

Hint: What operation follows addition?

Work: _____

Question 2 — Level 1: Mean

Find the mean of [11, 13, 16, 17, 23].

Hint: Count entries, not distinct values.

Work: _____

Question 3 — Level 1: Odd median

Find the median of [5, 7, 9, 10, 14].

Hint: How many values?

Work: _____

Question 4 — Level 1: Even median

Find the median of [3, 7, 8, 12].

Hint: Find the middle pair.

Work: _____

Question 5 — Level 1: Single mode

Find the mode of [4, 4, 6, 8, 10].

Hint: Which value repeats?

Work: _____

Question 6 — Level 1: Two modes

Find all modes of [2, 3, 3, 4, 4, 5].

Hint: Ties are possible.

Work: _____

Question 7 — Level 1: No repeated mode

Using the stated classroom convention, what is the mode of [2, 4, 6, 8]?

Hint: No value appears more often.

Work: _____

Question 8 — Level 1: Range

Find the range of [11, 19, 24, 31].

Hint: Identify extremes.

Work: _____

Question 9 — Level 1: Negative range

Find the range of [-5, -3, 0, 2, 6].

Hint: Subtracting a negative adds.

Work: _____

Question 10 — Level 1: Interpretation

The eight-score mean is 75. Did all eight students score 75? Explain.

Hint: Look at the listed values.

Work: _____

Question 11 — Level 2: Decimal mean

Calculate the mean of [1.2, 1.5, 2.4, 2.9].

Hint: Keep tenths until final.

Work: _____

Question 12 — Level 2: Repeated median

Find the median of [6, 8, 8, 8, 10, 12, 14].

Hint: Every observation occupies a position.

Work: _____

Question 13 — Level 2: Categorical mode

Find the modal category in ['Biology', 'Chemistry', 'Biology', 'Mathematics', 'Biology'].

Hint: Tally category counts.

Work: _____

Question 14 — Level 2: Frequency mean

From frequencies {50: 2, 60: 3, 70: 4, 80: 1}, calculate the exact mean.

Hint: Multiply each score by frequency.

Work: _____

Question 15 — Level 2: Frequency median

For the same exact-value frequency table, find the median.

Hint: List 10 ordered positions.

Work: _____

Question 16 — Level 2: Frequency mode

For the same exact-value frequency table, identify the modal score.

Hint: Look at the corresponding score.

Work: _____

Question 17 — Level 2: Weighted mean

Find the weighted result for quiz 80 (20%), assignment 70 (30%), exam 60 (50%).

Hint: Check weights first.

Work: _____

Question 18 — Level 2: Unknown value

Five observations have mean 12, and four are 8, 10, 14, 16. Find the fifth.

Hint: Recover sum from mean.

Work: _____

Question 19 — Level 2: Same mean, different range

Compare A=[8,9,10,11,12] and B=[0,5,10,15,20]: do they have the same mean and range?

Hint: Compare extreme values.

Work: _____

Question 20 — Level 2: Outlier effect

Compare the mean and median of earnings [200,220,240,240,250,260] with the seven-value list that also includes 2000.

Hint: Compare middle positions and totals.

Work: _____

Question 21 — Level 3: Grouped mean

Intervals 40–49, 50–59, 60–69, 70–79 have frequencies 2,3,4,1. Estimate the mean by class midpoints.

Hint: Use class midpoints.

Work: _____

Question 22 — Level 3: Cumulative frequency

Exact values 50:2, 60:3, 70:4, 80:1. Identify the fifth and sixth ordered scores and calculate the median.

Hint: Write positions 1–10.

Work: _____

Question 23 — Level 3: Modal class

For grouped intervals 40–49:2, 50–59:3, 60–69:4, 70–79:1, identify the modal class.

Hint: Modal class ≠ exact mode.

Work: _____

Question 24 — Level 3: Unknown frequency

Values 10,20,30 have respective frequencies 2,x,3. If there are 10 observations, find x and the mean.

Hint: Use the total count.

Work: _____

Question 25 — Level 3: Mean and range

Find the mean and range of [4, 9, 9, 13, 15].

Hint: Check both units.

Work: _____

Question 26 — Level 3: Weighted assessment

Course weighting: quiz 75 (20%), assignment 60 (30%), examination 80 (50%). Calculate final points.

Hint: Weights sum to one.

Work: _____

Question 27 — Level 3: Corrected mean

Four recorded scores were 15,20,24,31. The score 24 was corrected to 26. Find the new mean.

Hint: Keep number of students fixed.

Work: _____

Question 28 — Level 3: Choose measure

Fictional household incomes [200,220,230,240,10000]. Choose a typical-value summary and explain.

Hint: Who is the summary for?

Work: _____

Question 29 — Level 3: Spreadsheet outputs

The eight-score data occupy Excel cells B2:B9. Which formulas produce mean, median, mode, range, and what are the results?

Hint: Check the exact range.

Work: _____

Question 30 — Level 3: Integrated challenge

For [3, 5, 5, 7, 10, 12], calculate the mean, median, mode and range. Interpret what each means.

Hint: Check each distinct goal.

Work: _____