

1. Find the range of 2,4,4,6,9.

2. Find the density for frequency 30 and class width 10.

3. Find the IQR when $Q_1=12, Q_3=21$.

4. Find the sample walker proportion for 24 of 80.

5. Find pie angle for 10 of 40 students.

6. A line graph is always the best display for unrelated categories.

☐ True ☐ False

7. A grouped midpoint mean is always the exact mean of the original measurements.

☐ True ☐ False

8. A positive correlation proves that one variable causes the other.

☐ True ☐ False

9. The line $y=40+4.5x$ fits scores for 1-5 study hours. Why is the prediction at $x=10$ unreliable?

☐ Because 85 is too large to print

☐ $x=10$ lies outside the observed range, so it is an extrapolation whose trend may not continue

☐ The line has no gradient

10. Equal medians prove that two groups have the same spread.

☐ True ☐ False

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1. **7.0**

Range=maximum-minimum=9-2=7.

2. **3.0**

Density=frequency/class width=30/10=3.

3. **9.0**

IQR=Q3-Q1=21-12=9.

4. **0.3**

24/80=0.3.

5. **90.0**

10/40×360=90°.

6. **False**

A pie chart must represent a complete total with non-overlapping categories. Pictogram keys control the count, not decorative icon size. A truncated axis may exaggerate a small difference; read the scale before comparing.

7. **False**

The grouped mean is an estimate because all members are represented by a midpoint. A median is not found by averaging the class labels. Outliers can alter the mean/range substantially.

8. **False**

Do not join scatter points in observation order as though they formed a time series. A steep line need not imply strong correlation. An extrapolated formula value is a prediction whose assumptions need scrutiny.

9. **x=10 lies outside the observed range, so it is an extrapolation whose trend may not continue**

Within 1-5 the line interpolates between observed points. At x=10 the assumption that gains continue linearly is untested - improvement often flattens, so 85 is a speculation, not a measurement.

10. **False**

The median line need not be halfway along the box. Equal medians do not mean identical distributions. Whisker meanings depend on whether outliers are drawn separately; read the stated convention.