

6. Statistics

Starter Quiz ·

AQA · GCSE · Mathematics

Name: \_\_\_\_\_ Score: \_\_\_\_\_

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 Q1=12,Q3=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 the best display for unrelated categories.  
  
☐ True      ☐ False
7. Midpoints assume values sit in the middle of each class, so the result is only an estimate.  
  
☐ True      ☐ False
8. Correlation does not prove causation.  
  
☐ True      ☐ False
9. The line  $y=40+4.5x$  fits scores for 1-5 study hours. Why is the prediction at  $x=10$  unreliable?  
  
☐ The line has no gradient, so it cannot be used for prediction  
  
☐  $x=10$  lies outside the observed range, so it is an extrapolation whose trend may not continue  
  
☐ Because the predicted score of 85 is too large to be realistic
10. Equal medians say nothing about spread.  
  
☐ True      ☐ False

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Answers ·

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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**  
  
 $10/40 \times 360 = 90^\circ$ .
6. **False**  
  
Unrelated categories suit a bar chart; a line graph suggests a continuous change, such as over time.
7. **True**  
  
True. Midpoints assume values sit in the middle of each class, so the result is only an estimate.
8. **True**  
  
True. Correlation does not prove causation; a third variable may affect both.
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. **True**  
  
True. Equal medians say nothing about spread; compare the IQR or the range.