Grade 9 Mathematics Worksheet

Data interpretation

Questions:

1.

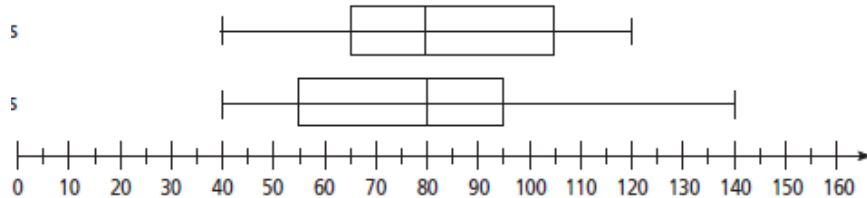Average temperatures in Johannesburg for 2008
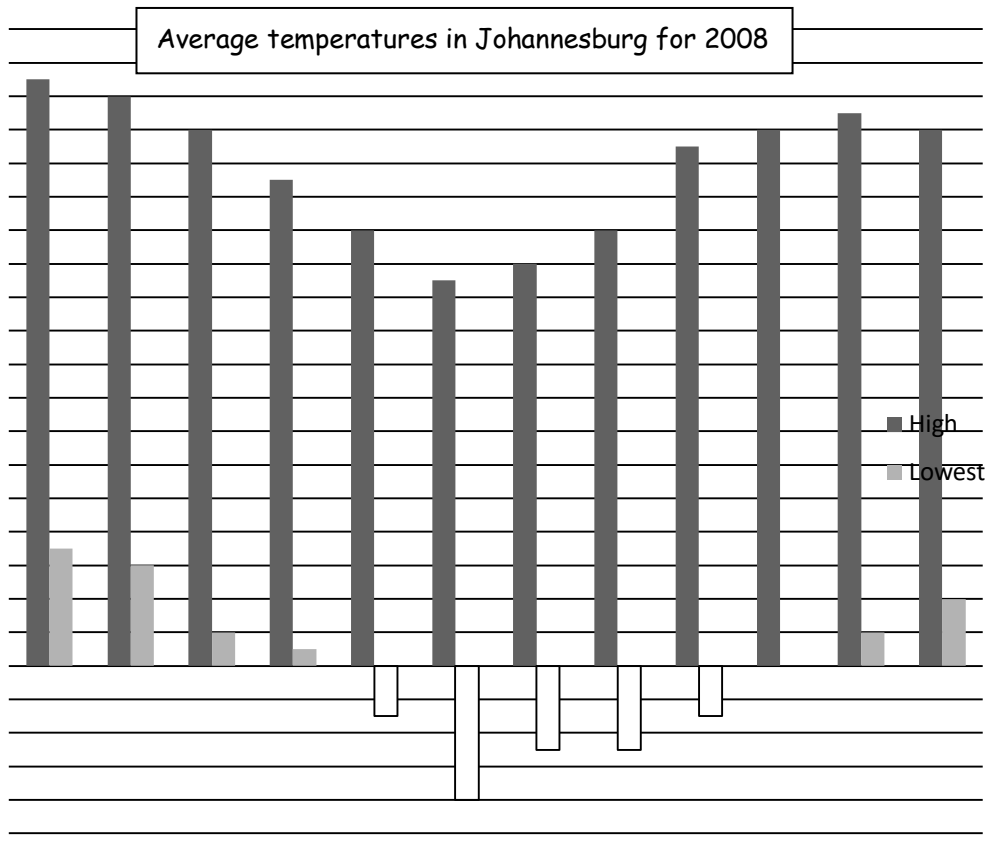
The chart above shows the average low and average high temperatures in Johannesburg for 2008. It is measured in degrees Celsius. What is the mean low temperature for the year in degrees Celsius?

A)   -8
B)   0
C)   2
D)   0,17

2.   The two box and whisker diagrams below show the number of boerewors rolls sold by grade 9 learners at the fete:

a)   Discuss the distributions in detail.

b)   Which class most probably sold the most rolls? Explain.

3.   On a specific day the following prices for instant coffee appeared on the website of a leading South African retailer. The prices are all quoted **per kilogram**.

R229,95; R135,96; R87,96; R65,32; R579,90; R98,65; R69,32; R59,98; R119,96; R87,56; R108,90

a)   What is the range of the data?

b)   Calculate the mean of the data.

c)   Determine the median of the data.

d)   Comment on the price of instant coffee **referring to your answers in a – c.**

Solution:

1. $\frac{7+6+2+1-3-8-5-5-3+0+2+4}{12} = \frac{1}{6} = 0,1666... = 0,17$. So the solution is (D).

2. a) The stall was open for 48 hours. The least number of boerewors rolls for Grade 9A in a slot was 40 and the most 120. The mean value is 80 and the lower and upper quartile is 65 and 105. The implication of these values are that if the 48 hours' totals were organised from lowest to highest, one quarter of the values will be between 40 and 65, the next quarter between 65 and 80, the next quarter between 80 and 105 and the last quarter between 105 and 120. We can also say that half of the values will be between 65 and 110. If we compare this with the sale figures of Grade 9B, we find that the minimum value and the median is the same, the lower quartile is lower, 55, the upper quartile lower, 95 and the maximum value is 140.

    b) Grade 9A. Half of their sales figures are between 65 and 195 compared to Grade 9B's between 55 and 95. **OR** Grade 9B. Their maximum sales are higher.

3. a) Range = 579,90 – 59,98 = R519,92.

    b) $\bar{x} = \frac{1643,46}{11} = R149,41$

    c) The median point is at $\frac{11+1}{2} = 6$ which once the data is ordered is R98,65.

    d) The price of coffee varies by R519,92 per kg – this is from roughly R60 per kg to R580 per kg. The median price is R98,65 per kg which is lower than the average price which is calculated at R149,41 per kilogram. This clearly shows that the data is skewed to the right, so the median value will most probably be the more reliable measure to describe the price of coffee with for this sample of 11 brands.

The importance of a question like this is that the learner must be able to argue with facts.