

Managing *Magnificent 7* ivory data – WORKED SOLUTIONS

BASIC FACTS

1. Shawu had the longest single tusk of the *Magnificent Seven*, measuring 317cm.
2. João had the heaviest single tusk, weighing 70kg.
3. The average length of all the tusks is calculated as:

$$\begin{aligned}\text{Ave} &= (\text{length of each tusk added together})/(\text{number of tusks}) \\ &= (237+237+271+250+259+265+251+251+287+273 \\ &\quad +317+305+264+207)/(14) \\ &= 3674/14 \\ &= 262.4286 \text{ (or } \underline{262} \text{ to the nearest whole number)}\end{aligned}$$

COMPARISONS

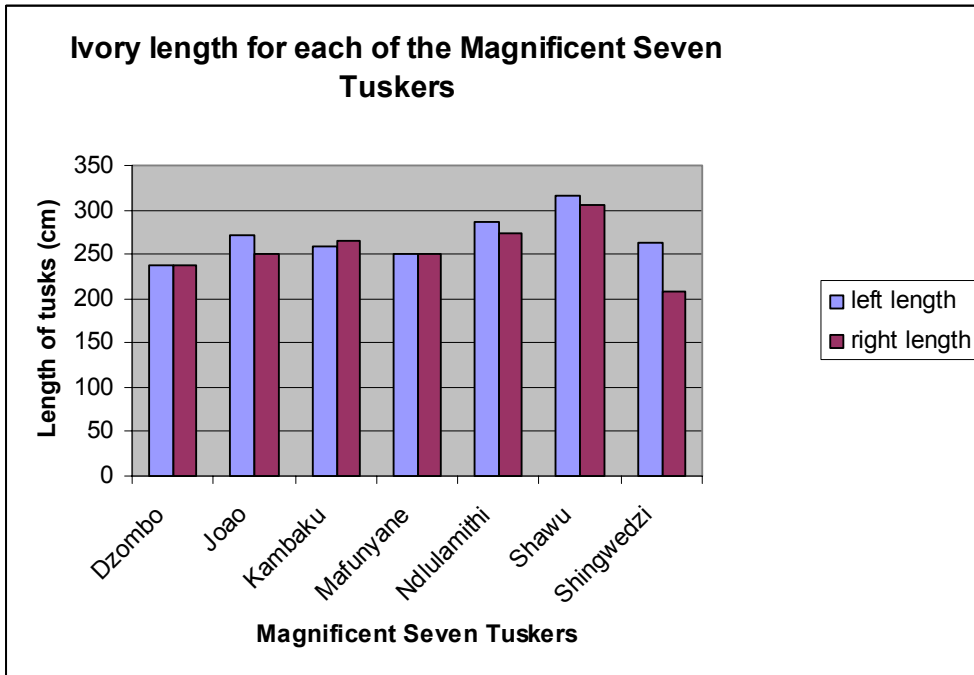
4. The longest tusk was Shawu's left tusk (317cm). The percentage difference is calculated as:

$$\begin{aligned}\% &= \frac{(\text{length of longest tusk} - \text{average tusk length})}{(\text{average tusk length})} \times 100 \\ &= \frac{(317 - 262)}{(262)} \times 100 \\ &= 20.99237\% \text{ (or } \underline{21\%} \text{ to the nearest whole number)}\end{aligned}$$

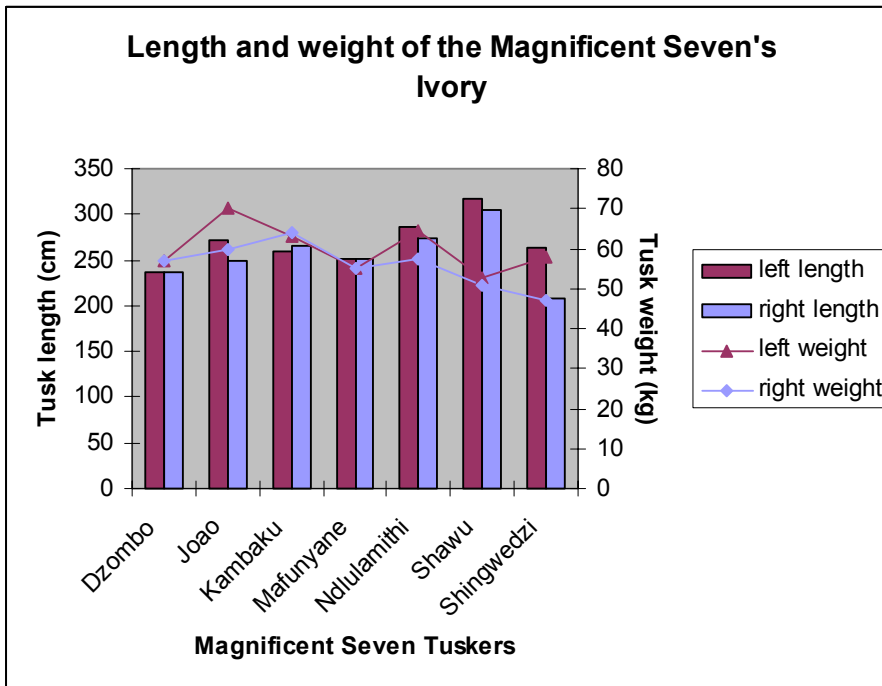
5. The weight of Mandleve's left tusk can be calculated by:

$$\begin{aligned}\text{Weight} &= (\text{weight of João's tusk}) \\ &\quad + (\text{weight of João's tusk}) \times (5/100) \\ &= (70) + (70 \times (5/100)) \\ &= 73.5\text{kg} \text{ (} \underline{73.5\text{kg}} \text{ to one decimal place)}\end{aligned}$$

6. There are various ways to represent the data as a bar chart. Here is one example:



7. Here is an example of a combined bar and line graph:



Managing *Magnificent 7* ivory data – NOTES

This activity can be used in various ways at different levels. It supports these sections of the South African Revised National Curriculum Statement:

☞ **Learning Area: Mathematics**

LO1 – The learner is able to recognize, describe and represent numbers and their relationships and can count, estimate and check with competence and confidence in solving problems.

LO5 Data Handling – The learner is able to collect, summarise, display and critically analyse data in order to draw conclusions and make predictions.

☞ **Learning Area: Languages**

LO4 Writing – The learner is able to write different kinds of factual and imaginative texts for a wide range of purposes.

The activity can be expanded in any of the following ways:

- To provide more practice in manipulating numbers, more questions like 1-5 could be developed, where learners are asked to make comparisons and calculations from the ivory weights and heights.
- To consider business and economics aspects, calculations of the price of the *Magnificent Seven's* ivory could be made. Given the different prices of ivory by weight in the past, learners could calculate the different values of the *Magnificent Seven's* ivory and gain an appreciation of economics in the context of global supply and demand.
- Learners could be encouraged to work collaboratively, perhaps making presentations or developing posters about the Magnificent Seven. This would support Learning Area: Arts & Culture, LO4 Expressing and Communicating – The learner is able to analyse and use multiple forms of communication and expression in arts and culture.