

Grade 9 Mathematics Worksheet

Probability and graphs

Questions:

1. The Kruger National Park is one of the great tourist attractions in our country. The following statistics are available about the big five:

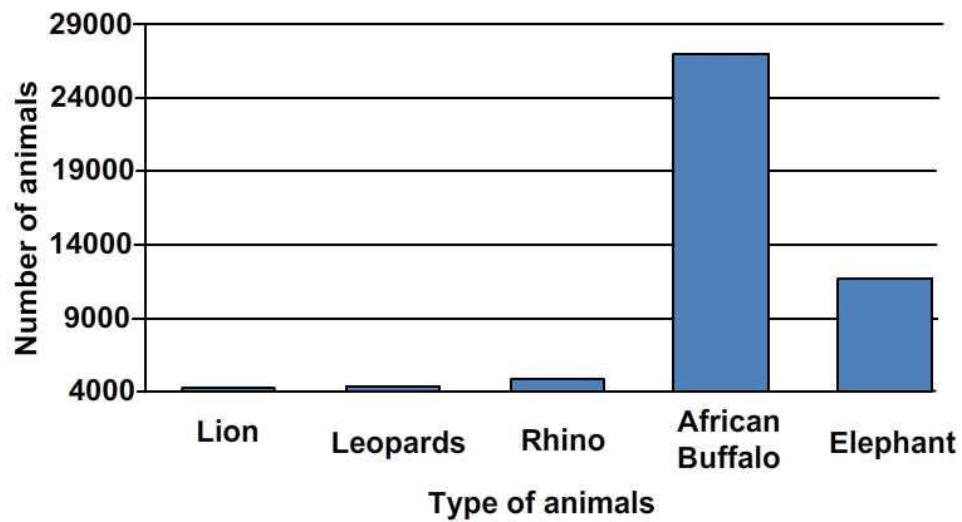
Lions	1 500
Leopards	1 000
Rhino	4 859
African Buffalo	27 000
Elephants	11 672

Assume there are roughly 250 000 land animals in the Kruger Park.

- a) What is the likelihood of you seeing any one of the big five animals on the first day?
- b) What is the likelihood of you seeing each of the big five animals on a specific day? Hint: you will have to do five different calculations.
- c) You are working for SANParks (South African National Parks) and there is an event taking place to promote tourism to the Kruger National Park.
 - i) Draw a pie chart on the big five in relation to each other.
 - ii) Draw a pie chart where you use total number of the big five opposed to the other animals.
 - iii) Would it be possible to draw a pie chart with each of the big five in relation to all the other animals in the Kruger National Park? Motivate your answer.
- d) Kabelo is also working at SANParks. He brought the following graph to represent the data. Your boss says that the graph is misleading. Critically look at the graph and comment.

Grade 9 Mathematics Worksheet

Big Five animals in the Kruger National Park



Grade 9 Mathematics Worksheet

Solution:

1. a) $1\,500 + 1\,000 + 4\,859 + 27\,000 + 11\,672 = 46\,031$

$$\frac{46091}{250000} = 0,184$$

b) Lion: $\frac{1500}{250000} = \frac{3}{500} = 0,006$ Leopard: $\frac{1000}{250000} = \frac{1}{250} = 0,004$

Rhino: $\frac{4859}{250000} = 0,019$ Buffalo: $\frac{27000}{250000} = \frac{27}{250} = 0,108$

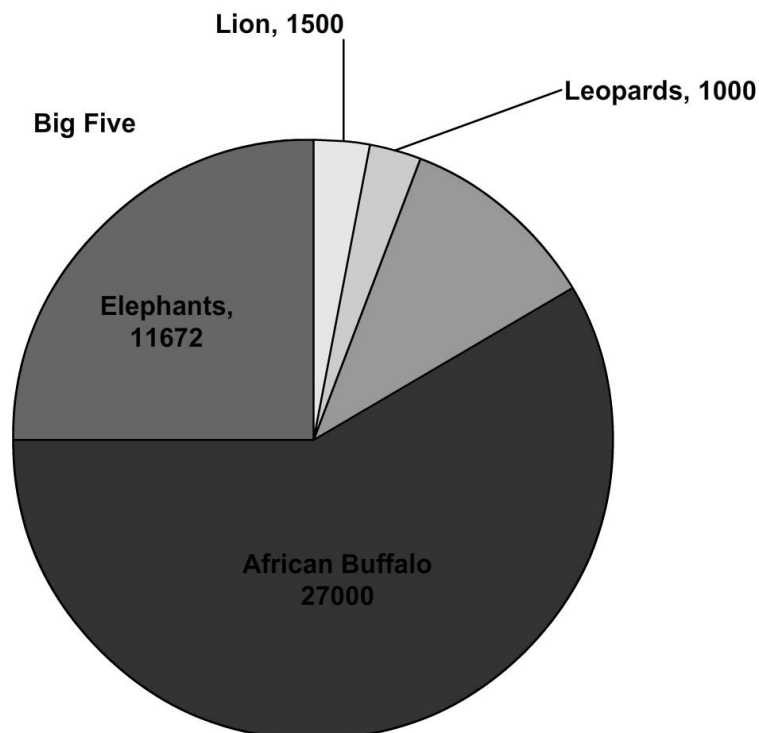
Elephant: $\frac{11672}{250000} = \frac{1459}{31250} = 0,047$

c) i) $1\,500 + 1\,000 + 4\,859 + 27\,000 + 11\,672 = 46\,031$

Lion: $\frac{1500}{46031} \times 360 = 12^\circ$ Leopard: $\frac{1000}{46031} \times 360 = 8^\circ$

Rhino: $\frac{4859}{46031} \times 360 = 38^\circ$ Buffalo: $\frac{27000}{46031} \times 360 = 211^\circ$

Elephant: $\frac{11672}{46031} \times 360 = 91^\circ$



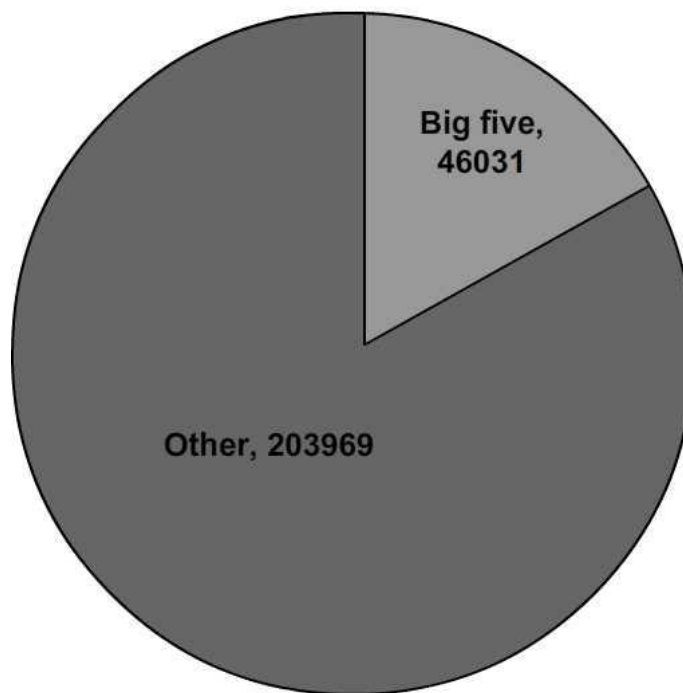
Grade 9 Mathematics Worksheet

ii) $250\,000 - 46\,031 = 203\,969$

Big five: $\frac{46031}{250000} \times 360^\circ = 115^\circ$

Other animals: $\frac{203969}{250000} \times 360^\circ = 245^\circ$

Animals in Kruger National Park



iii) Not really. The numbers for Lion and Leopards are exceptionally small. 1 500 lion out of 250 000 animals will be 2^0 and the leopard only 1^0 .

d) Kabelo started the y-axis at 4 000. This resulted in the number of the lion and leopards disappearing totally from the graph and the number of Rhino looking exceptionally small.