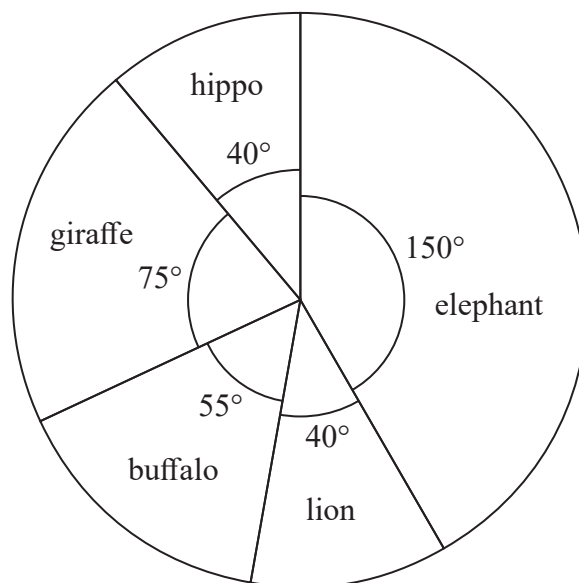**10** Jerry went on holiday to a game reserve.
He recorded the number of each of five different types of animal he saw.

The pie chart below gives information about his results.

(a) Write down the ratio of the number of elephants Jerry saw to the number of giraffes he saw.
Give your ratio in its simplest form.

(2)

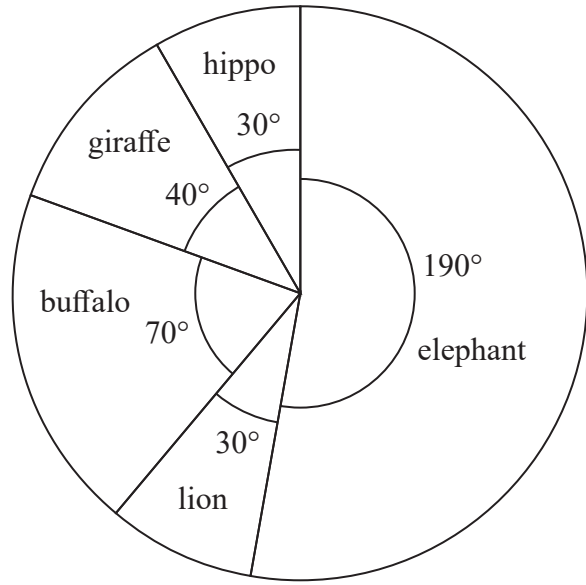Jerry saw 8 lions.

(b) How many giraffes did Jerry see?

(2)

Lesley went on holiday to the same game reserve.
She also recorded the number of each of five different types of animal she saw.
The pie chart below gives information about her results.

Lesley says,

"The pie charts show that I saw more elephants than Jerry saw."

(c) Is Lesley correct?
You must give a reason for your answer.

(1)

(Total for Question 10 is 5 marks)

11 (a) Solve $5m + 7 = 24$

$$m = \quad\quad\quad\quad$$

(b) Make t the subject of $k = \dfrac{t - e}{2}$

(c) Simplify $p^8 \div p^3$

(d) Simplify n^0

(e) Simplify $(3x^2y^5)^3$

(Total for Question 11 is 8 marks)

12 A circle has radius 9 cm.

(a) Work out the circumference of the circle.
Give your answer correct to 1 decimal place.

.... cm
(2)

The diagram shows the pentagon *ABCDE*.
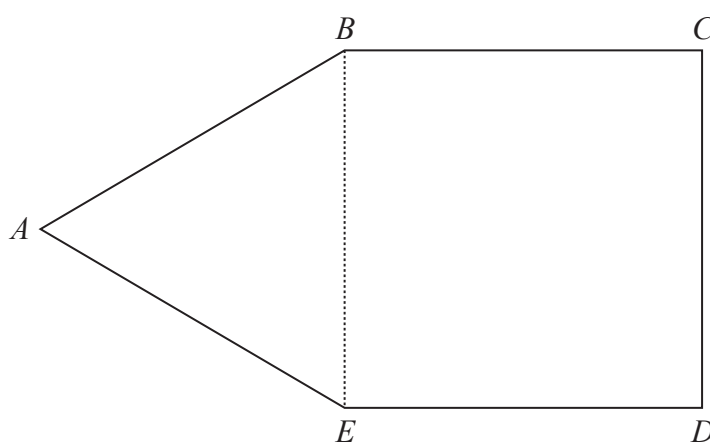

Diagram **NOT** accurately drawn

ABE is an equilateral triangle.

BCDE is a square with area 169 cm²

(b) Work out the perimeter of *ABCDE*.

.... cm
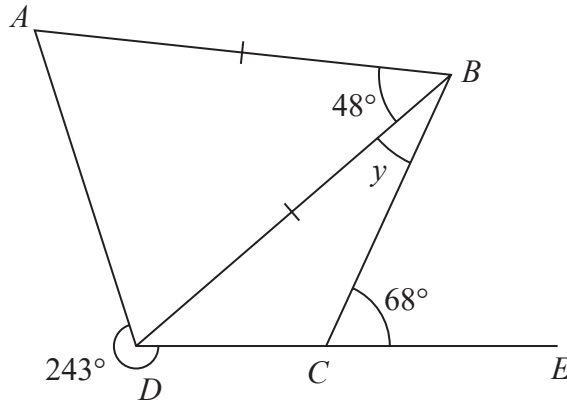**(3)**

(Total for Question 12 is 5 marks)

13

Diagram **NOT** accurately drawn

ABD is an isosceles triangle with *AB = DB*.
DCE is a straight line.

Angle *ABD* = 48°
Angle *BCE* = 68°
Reflex angle *ADC* = 243°

Work out the size of the angle marked *y*.
Give a reason for each stage in your working.

(Total for Question 13 is 5 marks)

14 Toy cars are made in a factory.

300 cars per hour are made in the factory.

Cars are made in the factory for $9\frac{1}{2}$ hours each day.

8% of the cars made in the factory are faulty.
The rest of the cars made in the factory are **not** faulty.

Work out how many of the cars made each day are **not** faulty.

(Total for Question 14 is 4 marks)

15 Use ruler and compasses only to construct the perpendicular bisector of the line *AB*.
You must show all of your construction lines.

A ————————————————————— *B*

(Total for Question 15 is 2 marks)

16 The table shows information about the number of birds each of 40 people counted in their garden one morning.

Number of birds	Frequency
1 − 5	5
6 − 10	10
11 − 15	16
16 − 20	9

(a) Write down the modal class.

(1)

(b) Work out an estimate for the mean number of birds.

(4)

(Total for Question 16 is 5 marks)