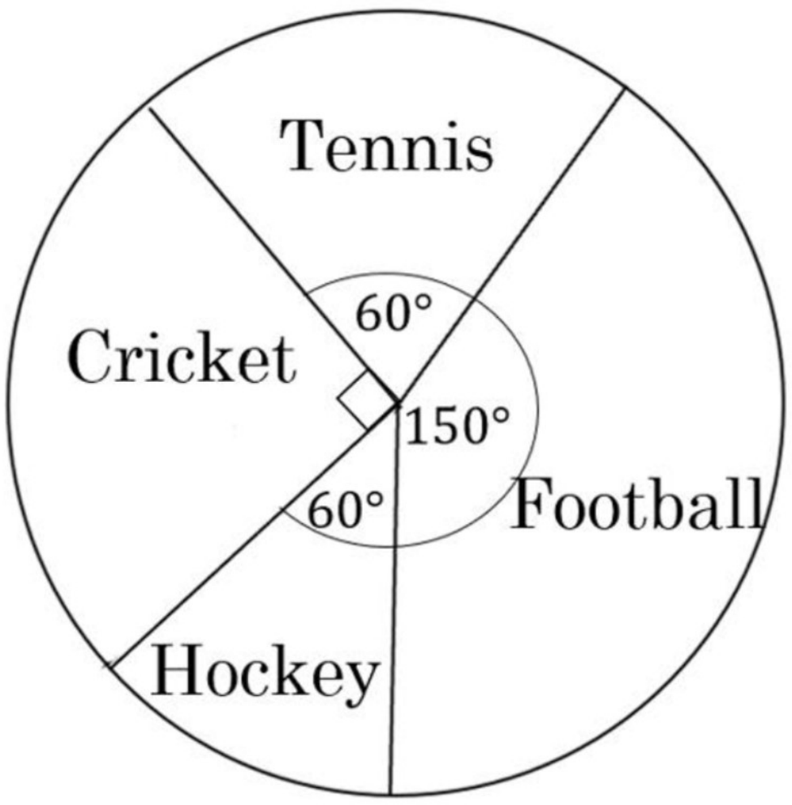
Pie Charts Exam Practice

Q1. A group of students were asked which is their favourite sport.
The results are shown below:



a) 30 students chose tennis. Work out how many students were interviewed.

$60^\circ = 30$ students
$1^\circ = 0.5$ students
$360^\circ = 180$ students

Answer: 180 students

(2 marks)

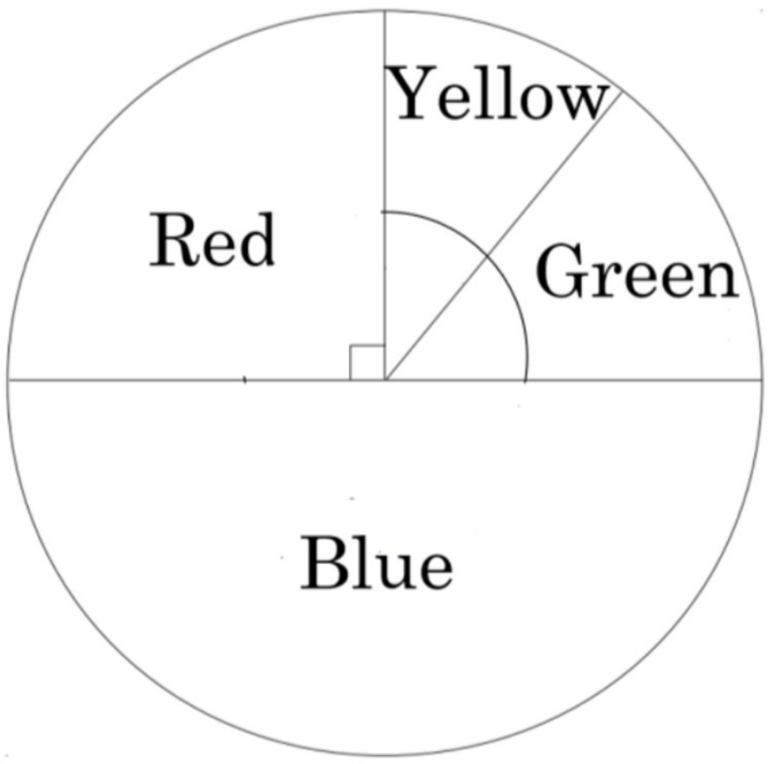
b) How many more students choose Cricket than tennis?

$1^\circ = 0.5$ students
$90^\circ = 45$ students for cricket.
$\Rightarrow 45 - 30 = 15$ more than tennis

Answer: 15 students

(2 marks)

Q2. A group of 132 pupils were asked which is their favourite colour.
Half of the students chose blue and $\frac{1}{12}$ of the students chose green.



a) What fraction of the pupils chose yellow? Simplify your answer.

$\frac{1}{4} - \frac{1}{12} = \frac{3}{12} - \frac{1}{12}$

$= \frac{2}{12}$

$= \frac{1}{6}$

Answer: $\frac{1}{6}$

(2 marks)

b) How many students chose green?

$\frac{1}{12}$ of 132

$\frac{1}{12} \times 132 = 11$

Answer: 11

(2 marks)

c) How many students did not choose the colour red?

$\frac{3}{4}$ of 132 did not choose red

$= 99$

Answer: 99

(2 marks)

Q3. Display the following information in an accurate pie chart:

Food	Pizza	Kebab	Burger	Hotdog
No. of people	28	12	60	20

Total

120

120 people = 360°

⇒ 1 person = 3°

Pizza: $28 \times 3^\circ = 84^\circ$

Kebab: $12 \times 3^\circ = 36^\circ$

Burger: $60 \times 3^\circ = 180^\circ$

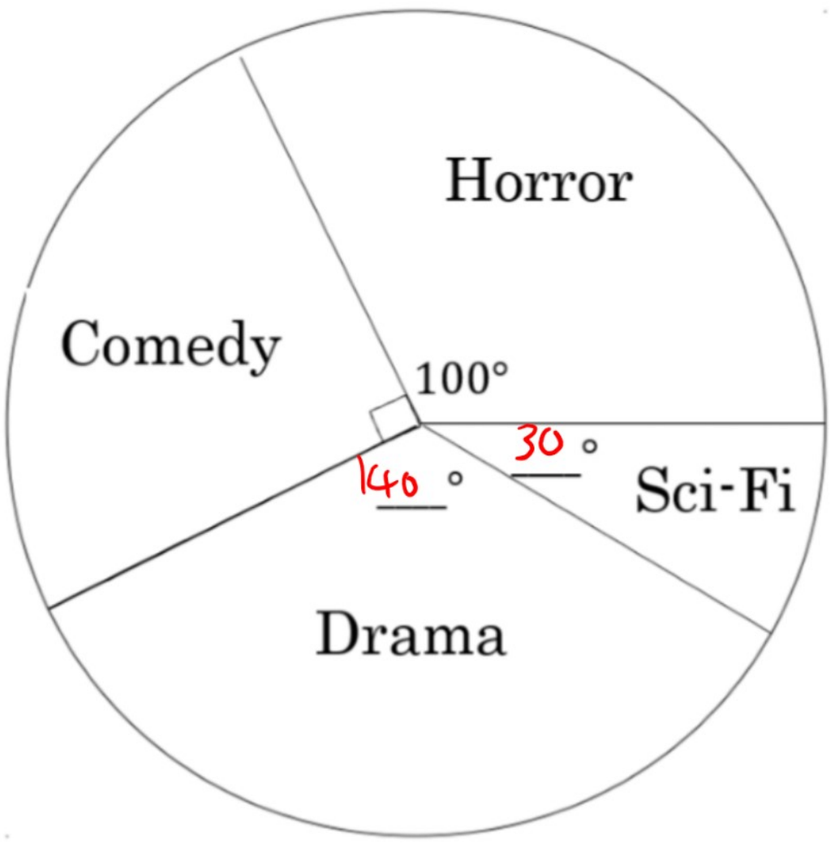
Hotdog: $20 \times 3^\circ = 60^\circ$

Answer: _____

(4 marks)

Q4. Complete the pie chart and the table below using the information:

Film Type	Comedy	Drama	Horror	Sci-Fi
No. of people	36	56	40	12



- 40 people = 100°

  1 person = 2.5° $\left(\frac{100}{40} = 2.5\right)$

  ⇒ Sci-Fi = 12 × 2.5°

  = 30°

- Comedy : 1 person = 2.5°

  ⇒ no. people = $\frac{90°}{2.5°}$

  = 36

- Drama : 360° − 100° − 30° − 90°

  = 140°

  No. of people = $\frac{140°}{2.5}$

  = 56

Answer: _____

(4 marks)

Q5. A pie chart is to be made to display 1440 people's hobbies.

a) Complete the table.

Hobby	Frequency	Degrees
Reading	76	19
Fishing	416	104
Sailing	320	80
Cooking	380	95
Programming	248	62
Total:	1440	360°

$80^\circ = 320$ people

$\Rightarrow 1^\circ = 4$ people

$\Rightarrow$ divide each frequency by 4 to get no. of degrees for each hobby.

Answer: _____

(3 marks)

b) What percentage of the people did cooking as their hobby?

$\frac{380}{1440} \times 100 = 26.38\ldots\%$

Answer: 26.4% _____

(1 mark)

Q6. In a sweet jar, the number of red sweets is three times the number of blue sweets. The number of green sweets is half the number of blue sweets. Construct an accurate pie chart to display this information.

Red : Blue : green

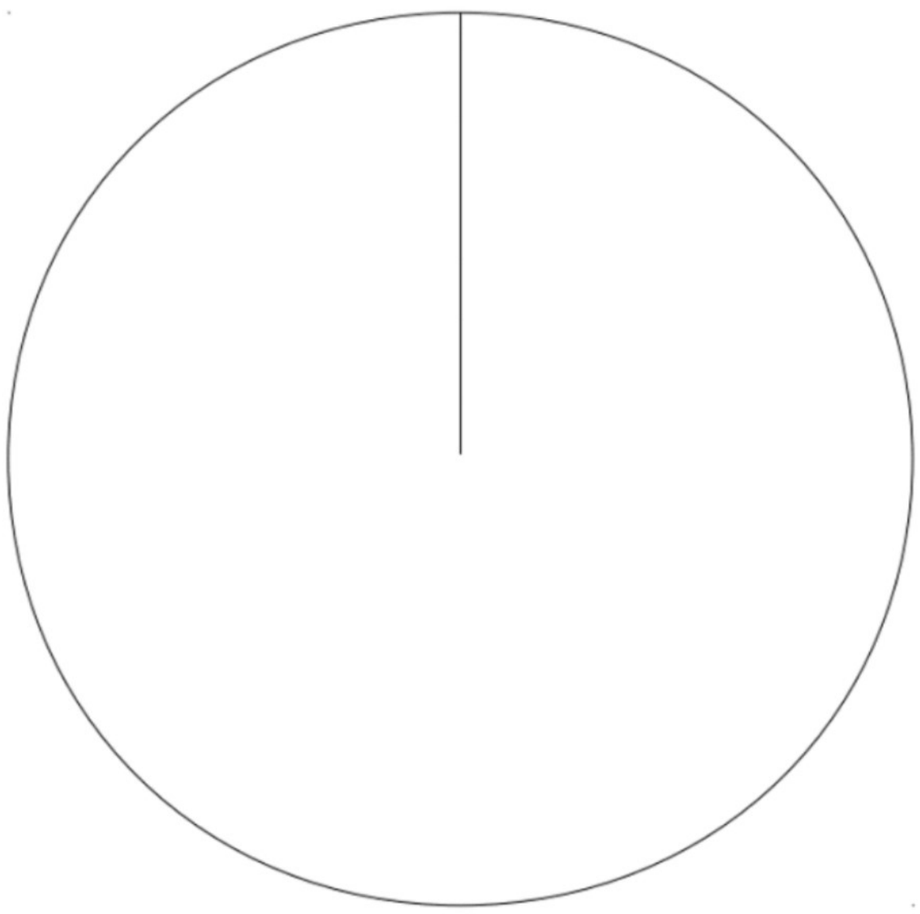
$3x : x : \frac{x}{2}$

$\Rightarrow 3 : 1 : 0.5$

Sharing 360° in this ratio :

$\frac{360}{3+1+0.5} = \frac{360}{4.5}$

$= 80$



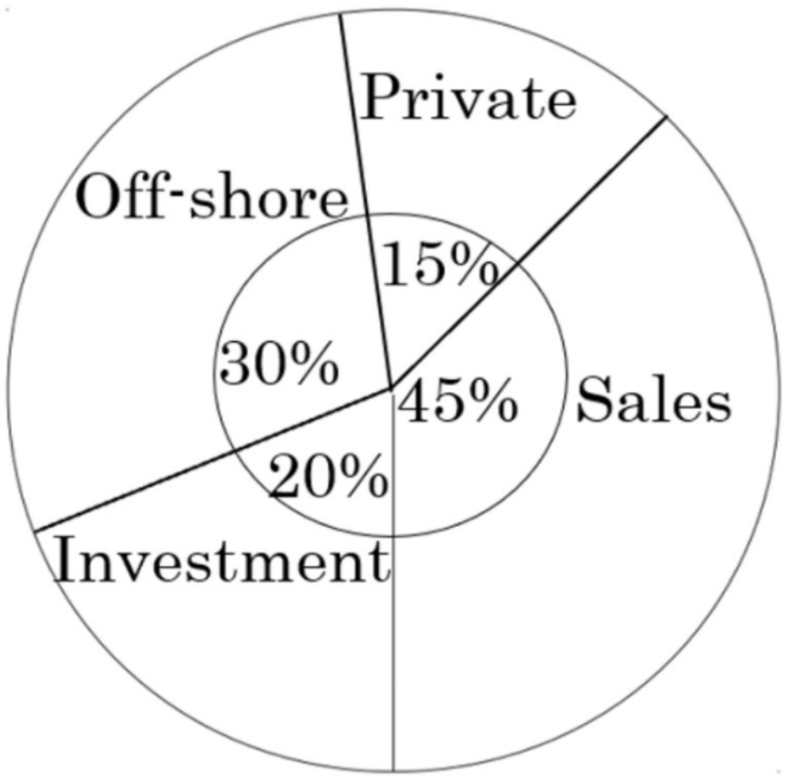
$\Rightarrow$

Red	Blue	Green
240°	80°	40°

Answer: _____

(4 marks)

Q7. A company records the amount of money it makes from different parts of the business as a percentage of its total income:



a) If £2500 was raised from Investment, work out how much money was raised from Private and Sales.

20% = £2500

⇒ total (100%) = £12500

⇒ Private & Sales = 60% of £12500

(15% + 45%)

Answer: £7500

(2 marks)

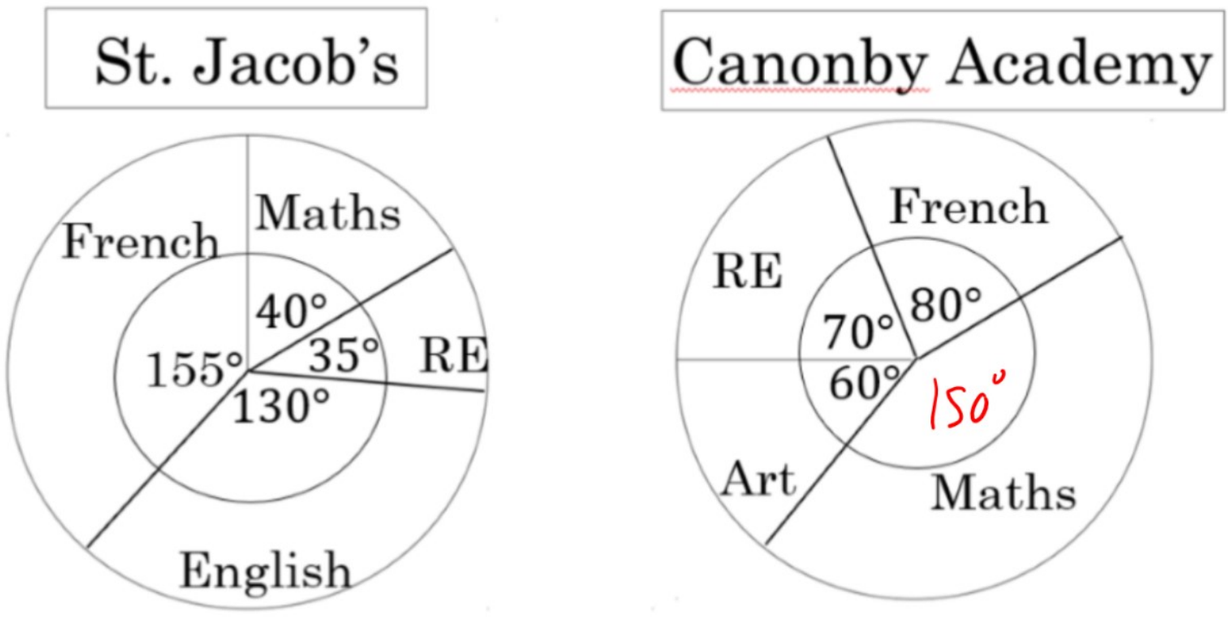
b) What angle should be used to represent the Off-shore section?

30% of 360 = 108°

Answer: 108°

(2 marks)

Q8. Pupils at two different schools were asked what their favourite subject is. The results are below:



a) To 1 decimal place, what percent is maths more popular at St. Jacob's than at Canonby Academy?

· St. Jacobs: $\frac{40}{360} \times 100 = 11.11\%$

· Canonby: Maths sector measures $360° - 80° - 70° - 60° = 150°$

$\frac{150}{360} \times 100 = 41.66\%$

$\Rightarrow$ maths is $41.66 - 11.11 = 30.55\%$.

$= 30.6\%$. more popular at Canonby Academy

Answer: 30.6 %

(3 marks)

b) John claims the number of students studying French is less than the number of students studying French at Canonby school. Do you agree? You must explain your choice.

You cannot tell, as we don't know the total of students in either school.

Answer: Cannot tell

(1 mark)