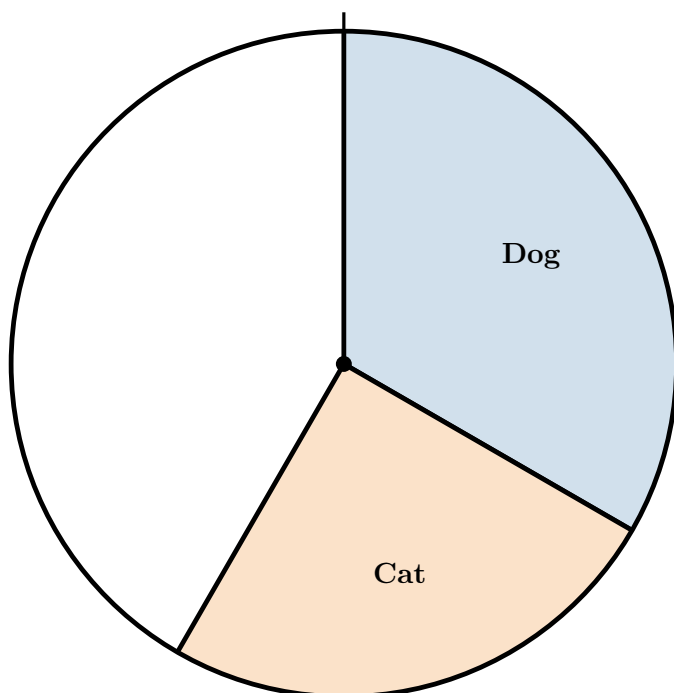


Drawing Pie Charts with a Protractor

Name: _____ Date: _____

Key formula: $\text{sector angle} = \frac{\text{amount}}{\text{total}} \times 360$

Chart 1 – Favourite Pets (class of 36 students)



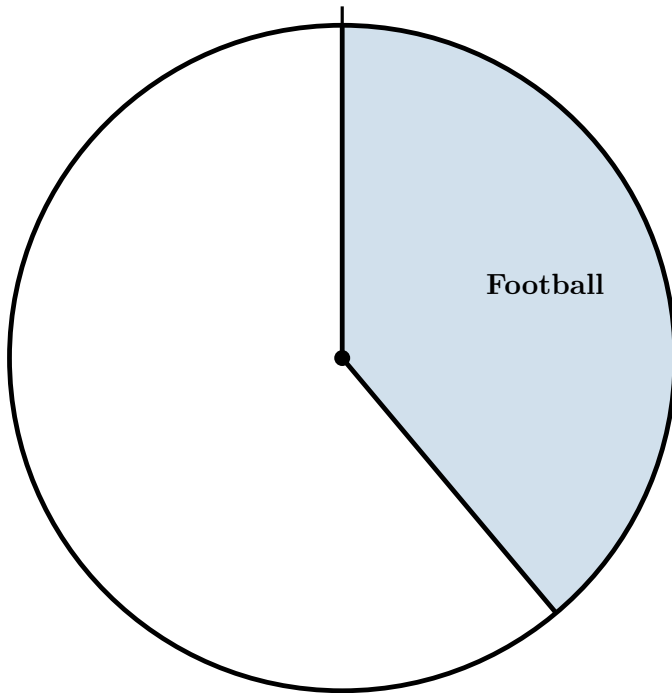
Pet	No.	Fraction	Angle
Dog	12	$\frac{1}{3}$	120°
Cat	9	$\frac{1}{4}$	90°
Fish	8	$\frac{2}{9}$	80°
Rabbit	5	$\frac{5}{36}$	50°
Other	2	$\frac{1}{18}$	20°
Total	36	1	360°

Getting started: The **Dog** (120°) and **Cat** (90°) sectors have already been drawn for you. Starting from the Cat radius, use your protractor to add **Fish** (80°), **Rabbit** (50°) and **Other** (20°) in order. Label each sector when you have drawn it.

Questions:

1. Complete the pie chart
2. Which pet was chosen by exactly $\frac{1}{3}$ of the class?
3. Which single pet was chosen by exactly 9 students? _____

Chart 2 – Sports Club Memberships (36 members)



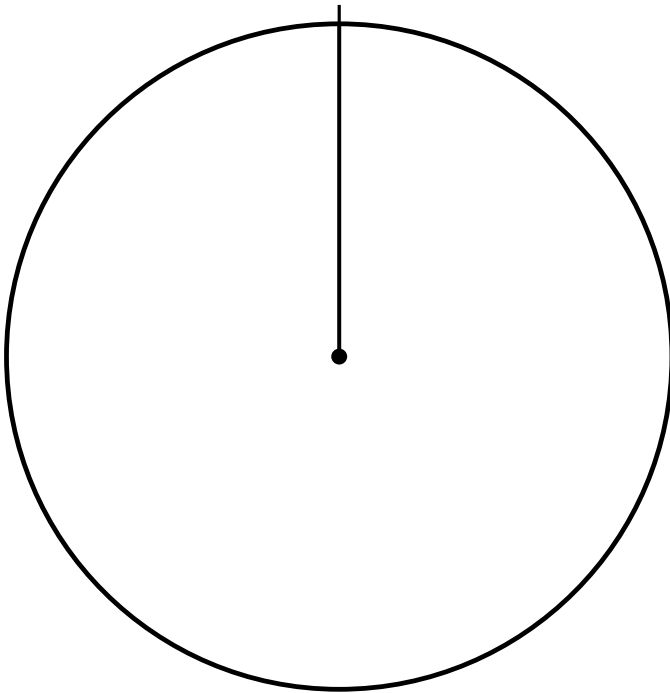
Sport	No.	Fraction	Angle
Football	14	$\frac{7}{18}$	140°
Swimming	9	$\frac{1}{4}$	90°
Tennis	6	$\frac{1}{6}$	60°
Basketball	5	$\frac{5}{36}$	50°
Other	2	$\frac{1}{18}$	20°
Total	36	1	360°

Questions:

- Complete the pie chart.
- Which sport has a sector angle of exactly 90°? _____
- What fraction of members play **Tennis**? _____
- How many degrees are taken up by the **three smallest** sports combined?

Answer: _____°

Chart 3 – How Students Spend Most of Their Pocket Money (36 students)

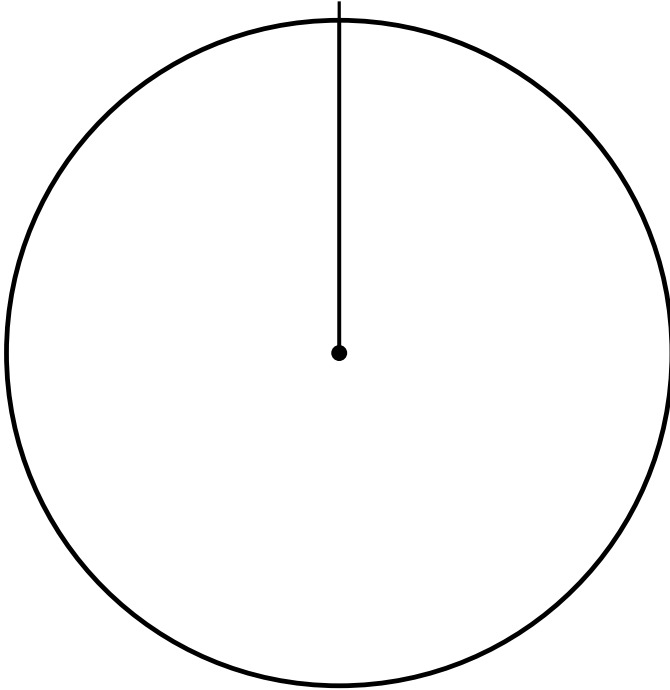


Category	No.	Fraction	Angle
Food & Drink	12	$\frac{1}{3}$	120°
Games	9	$\frac{1}{4}$	90°
Clothes	6	$\frac{1}{6}$	60°
Savings	6	$\frac{1}{6}$	60°
Other	3	$\frac{1}{12}$	30°
Total	36	1	360°

Questions:

1. Complete the pie chart.
2. Two categories have the same sector angle. Which two are they? _____

Chart 4 – Colours of Cars in a Car Park (60 cars)



Colour	No.	Fraction	Angle
White	20		
Black	15		
Silver	12		
Red	9		
Other	4		
Total	60	1	360°

Instructions:

1. Complete the **Fraction** column. Write each fraction in its simplest form.
2. Use $\text{angle} = \frac{\text{amount}}{\text{total}} \times 360$ to complete the **Angle** column.
3. Check your angles sum to 360°, then draw and label the pie chart.

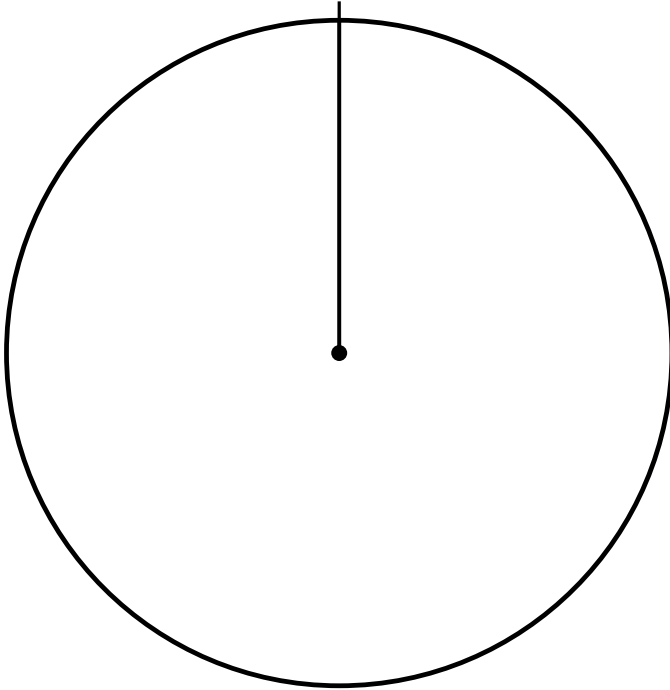
Questions:

1. Complete the table.
2. Complete the pie chart.
3. What angle represents **White** cars? Show your working.

Answer: _____°

4. What fraction of cars are **Black**? _____
5. Check: do your angles add up to 360°? Write your total. _____°

Chart 5 – Languages Spoken at Home (survey of 90 students)



Language	No.	Fraction	Angle
English	45		
Urdu	18		
Polish	9		
Punjabi	9		
Other	9		
Total	90		

Questions:

1. Complete the table.
2. Complete the pie chart.
3. Three languages have the **same** number of speakers. What angle does each of their sectors have?

Answer: _____°

4. English speakers make up what fraction of the survey? Write it in its simplest form. _____
5. **Challenge:** If 10 more students joined the survey and they all spoke Polish, what would the new angle for Polish be? Show your full working in the space below.

Answer: _____°