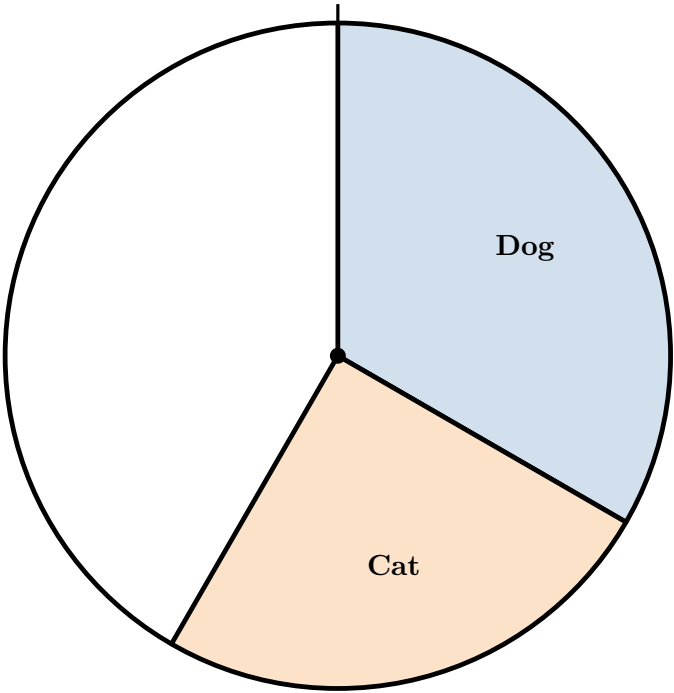


Drawing ^{diagramów kołowych} **Pie Charts** with a ^{kątomierza} **Protractor**

Name: _____ Date: _____

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

Chart 1 – Favourite Pets (class of 36 students)



Pet	No.	ułamek Fraction	kąt 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°

wycinki koła

Getting started: The **Dog** (120°) and **Cat** (90°) sectors have already been drawn for you.

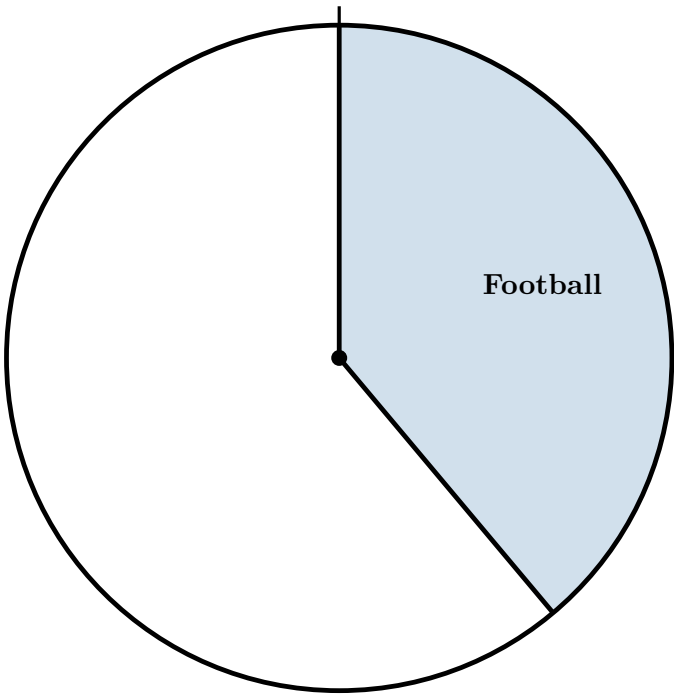
Starting from the Cat promienia , use your kątomierza protractor to add **Fish** (80°), **Rabbit** (50°) and

Other (20°) in order. Label each sector when you have drawn it.

Questions:

1. Complete the diagram kołowy 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.	ułamek Fraction	kąt 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:

1. Complete the

diagram kołowy
pie chart

 .

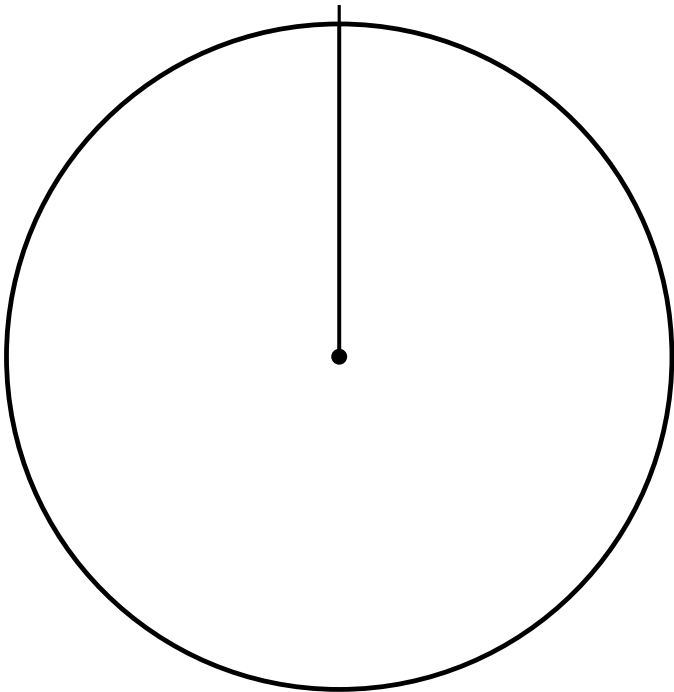
2. Which sport has a ^{wycinka koła} ^{kąt} ^{sector} ^{angle} of exactly 90° ? _____

3. What ^{ułamek} ^{fraction} of members play **Tennis**? _____

4. How many ^{stopni} ^{degrees} are taken up by the **three smallest** sports combined?

Answer: _____ $^\circ$

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



Category	No.	ułamek Fraction	kąt 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:

- Complete the

diagram kołowy

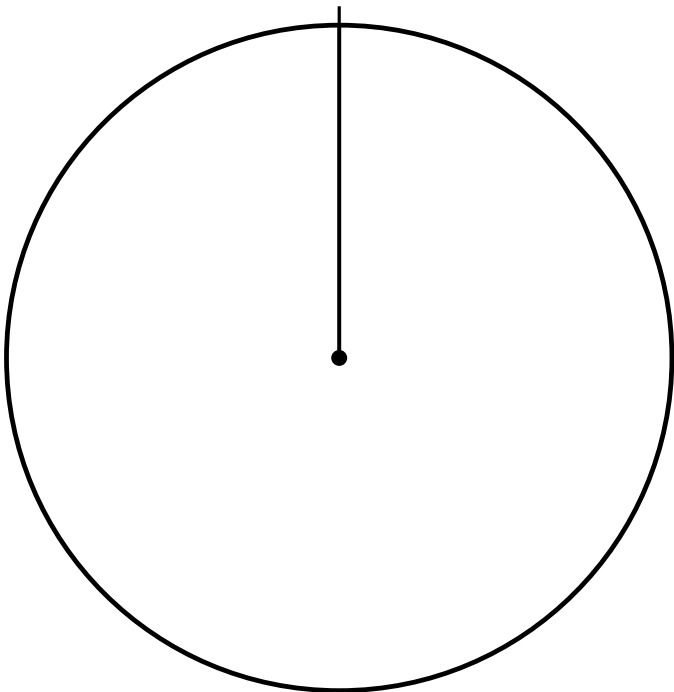
pie chart

 .

wycinka koła kąt

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.	ułamek Fraction	kąt Angle
White	20		
Black	15		
Silver	12		
Red	9		
Other	4		
Total	60	1	360°

Instructions:

- ułamek

fraction
- ułamek

fraction
- najprostszej postaci

simplest form
- Complete the **Fraction** column. Write each **fraction** in its **simplest form**.

2. Use $\text{angle} = \frac{\text{amount}}{\text{total}} \times 360^\circ$ to complete the **Angle** column.
3. Check your **angles sum** to 360° , then draw and label the **pie chart**.

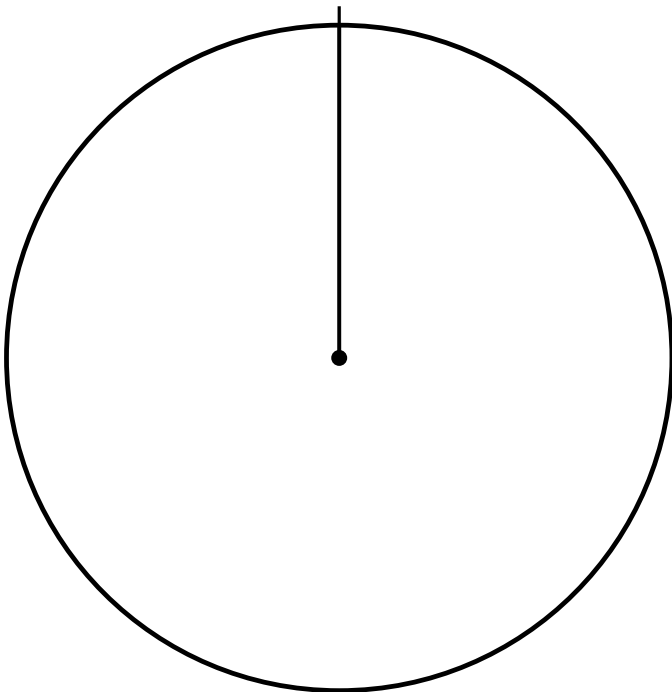
Questions:

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

Answer: _____°

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

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



Language	No.	$\frac{\text{u\lamek}}{\text{Fraction}}$	$\text{k\lq t}$ Angle
English	45		
Urdu	18		
Polish	9		
Punjabi	9		
Other	9		
Total	90		

Questions:

- 1. Complete the table.

2. Complete the **diagram kołowy** **pie chart** .

3. Three languages have the **same** number of speakers. What **kąt** **angle** does each of their **wycinków** **sectors** have?

Answer: _____°

4. English speakers make up what **ułamek** **fraction** of the survey? Write it in its **najprostszej postaci** **simplest form** .

5. **Challenge:** If 10 more students joined the survey and they all spoke Polish, what would the **kąt** **angle** for Polish be? Show your full working in the space below.

Answer: _____°