Name:

Exam Style Questions

Reading Pie Charts

Corbettmaths

Equipment needed: Pen, Ruler, Pencil and Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

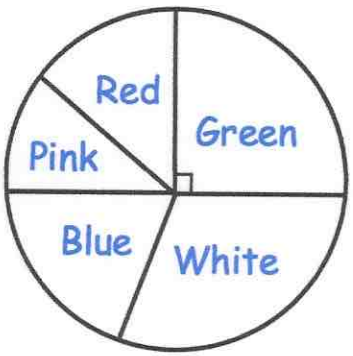
Video Tutorial

www.corbettmaths.com/contents

Video 164

Answers and Video Solutions

1. The pie chart shows the colours of 32 beads.



1/4

How many green beads are there?

1/4 of 32 = 8

8 .....

(1)

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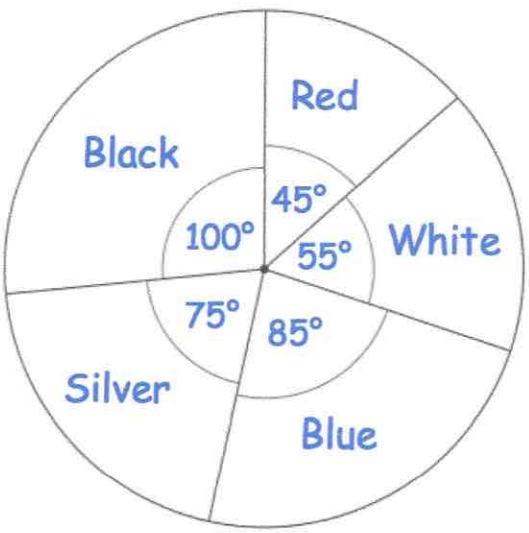
2. The pie chart shows the colours of cars in a car park.



(a) What is the most common colour of car in the car park?

Black .....

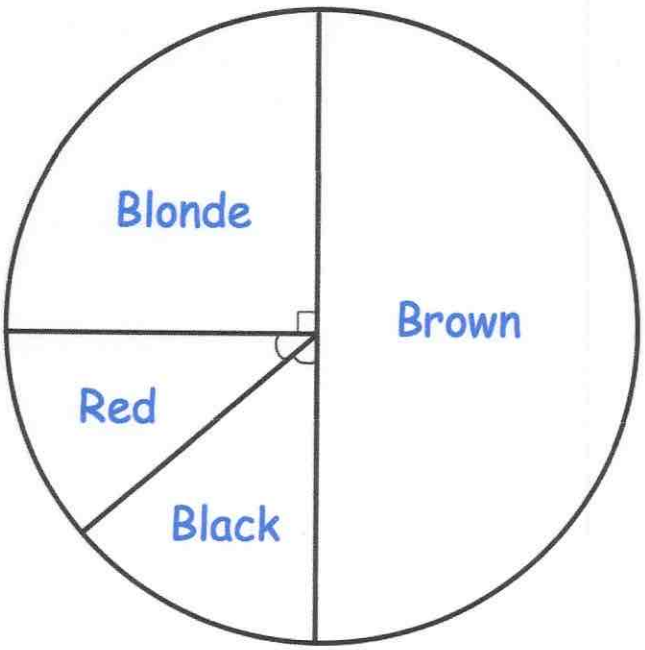
(1)

(b) What is the least common colour of car park?

Red .....

(1)

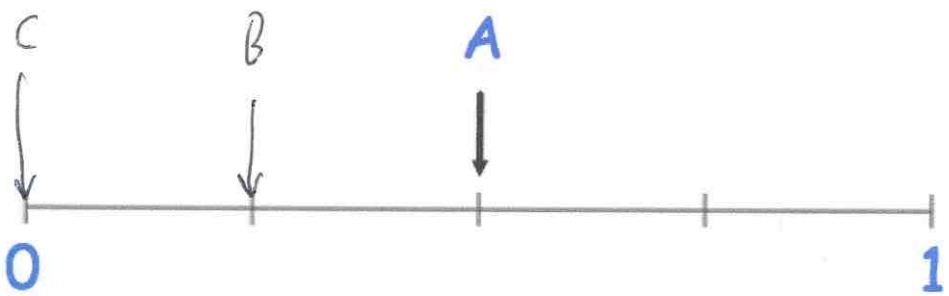
3. The pie chart shows information about the hair colour of the students in a class.



A student from the class is chosen at random.

(a) Mark, with the letter, the probabilities of each of the following on the scale below.
The first one has been done for you.

A: The student has brown hair.
B: The student has blonde hair.
C: The student has green hair.



(2)

There are 24 students in the class

(b) How many students have blonde hair?

$24 \div 6 = 6$

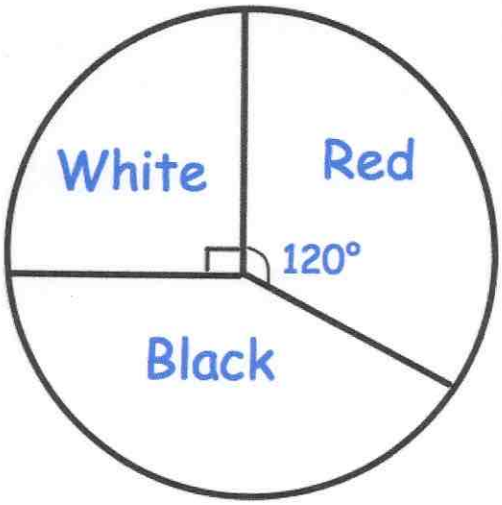
6

.....

(1)

4. A bag contains red, white and black counters.

The pie chart shows information about the counters in the bag.



(a) What fraction of the counters are white?
Give your answer in its simplest form.

$\frac{90}{360} = \frac{1}{4}$

$\frac{1}{4}$

.....

(2)

(b) What fraction of the counters are red?
Give your answer in its simplest form.

$\frac{120}{360} = \frac{1}{3}$

$\frac{1}{3}$

.....

(2)

There are 24 counters in the bag.

(c) Work out how many counters are black.

$\frac{1}{4}$ of 24 = 6 (white)

$\frac{1}{3}$ of 24 = 8 (red)

6 + 8 = 14

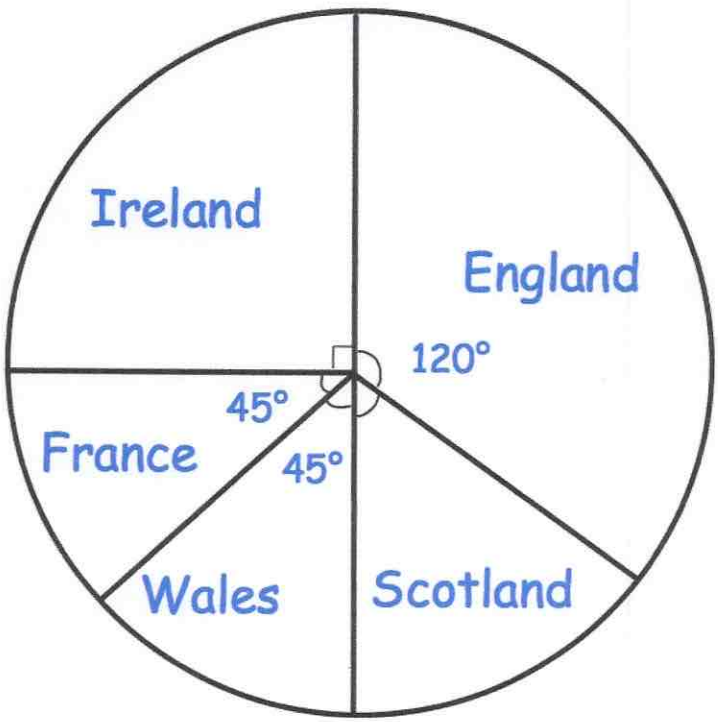
24 − 14 = 10

10

.....

(2)

5. A group of rugby fans were asked who they supported.
The pie chart and table show information about who they support.



Use the pie chart to complete the table.

Team	Angle of sector	Number of fans
England	120°	16
Scotland	60°	8
Wales	45°	6
France	45°	6
Ireland	90°	12

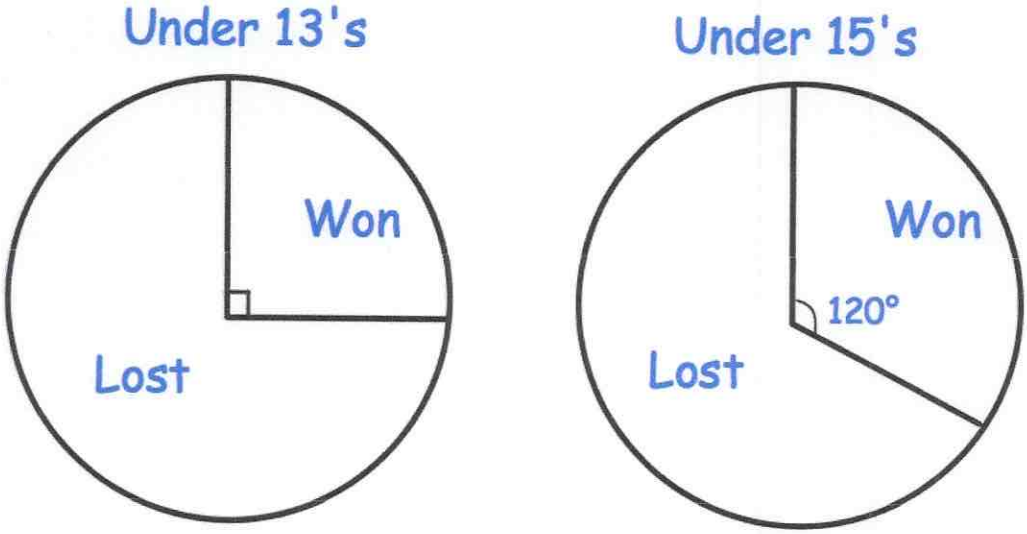
(4)

90° → 12 fans
180° → 24 fans
360° → 48 fans
$\frac{1}{3}$ of 48 = 16

16 ÷ 2 = 8

6. A youth club has two rugby teams, Under 13's and Under 15's.

The pie charts show information about the number of games each team won and lost, last season.



The Under 13's played 28 matches.
The Under 15's played 18 matches.

Which team won more matches?
Show your workings.

U13

28 ÷ 4 = 7

U15

18 ÷ 3 = 6

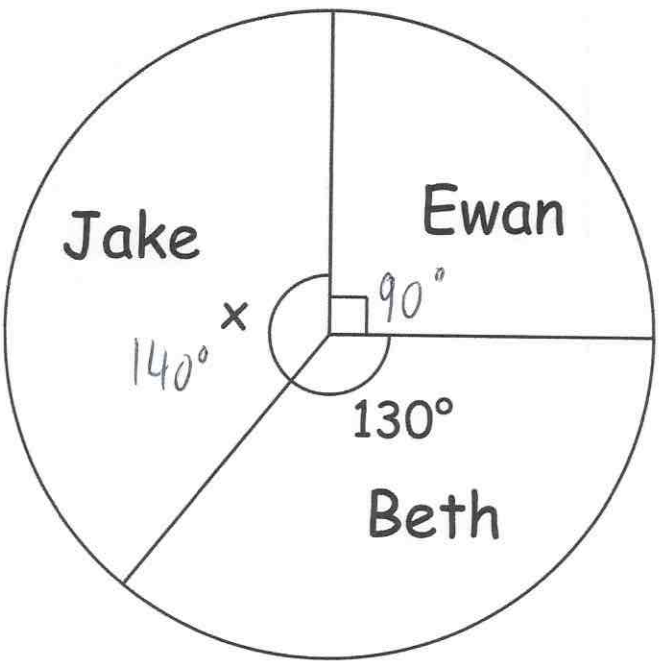
Under 13's

.....

(3)

7. Three students stand in a school election.

The pie chart shows information about the votes received by Ewan, Beth and Jake.



Not drawn accurately

(a) Which student received the greatest number of votes?

$130 + 90 = 220$

$360 - 220 = 140$

Jake

(2)

Ewan received 225 votes.

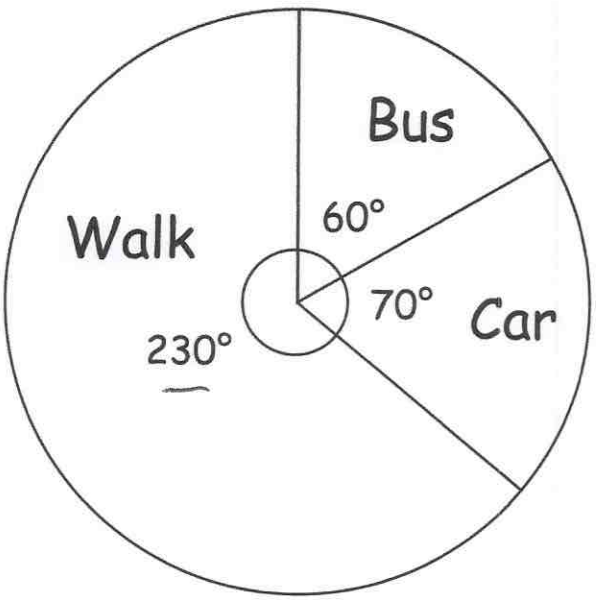
(b) How many votes did the 3 students receive in total?

$225 \times 4 = 900$

900

(1)

8. The pie chart shows how the students of a primary school travelled to school each day.



The headteacher says "exactly two thirds of the students walk to school."

Is the headteacher correct?
Explain your answer.

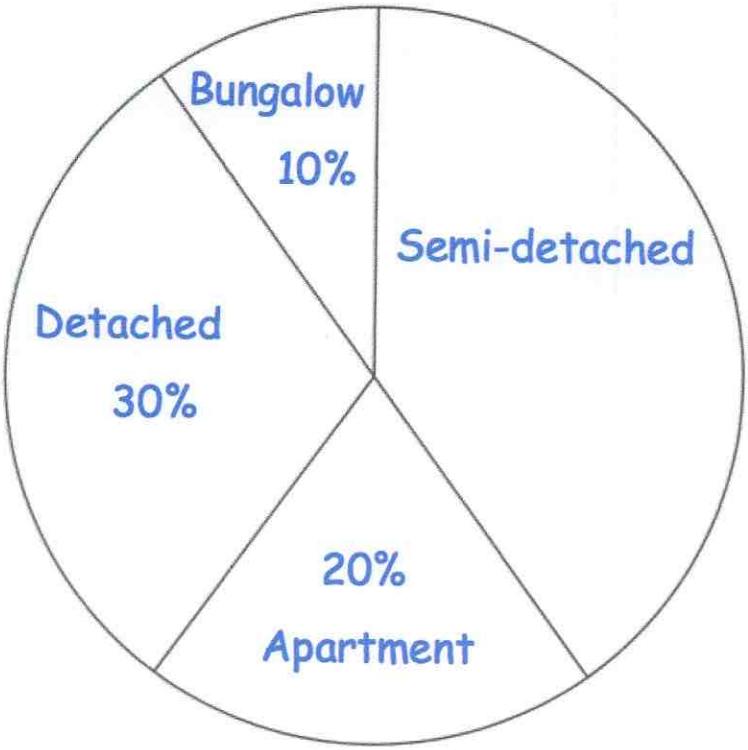
$\frac{230}{360} = \frac{23}{36}$ (not $\frac{2}{3}$)

or $\frac{2}{3}$ of 360 = 240°

No. As the angle is not 240°, it is not $\frac{2}{3}$.

(2)

9. The pie chart shows types of properties in a street with 80 properties.



(a) Work out the percentage of properties that are semi-detached.

$10 + 30 + 20 = 60$

$100 - 60 = 40$

40 ..... %

(2)

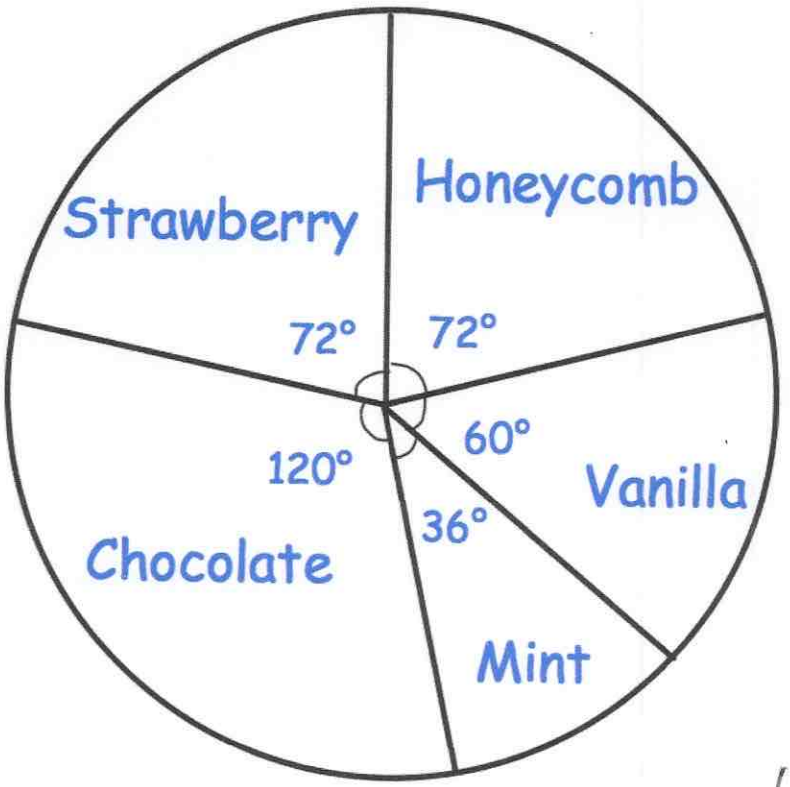
(b) Work out the number of semi-detached properties.

40% of $80 = 32$

32 .....

(2)

10. The pie chart shows the flavours of ice cream sold by a shop in one day.
There were a total of 270 ice creams sold.



$6 \overline{)270}$ → 045

(a) Work out the number of vanilla flavoured ice creams sold.

$\frac{60}{360} = \frac{1}{6}$ $\quad 270 \div 6$

45

.....

(2)

(b) Work out the number of mint flavoured ice creams sold.

$\frac{36}{360} = \frac{1}{10}$ $\quad 270 \div 10$

27

.....

(2)

(c) Work out the number of strawberry flavoured ice creams sold.

$\frac{72}{360} = \frac{1}{5}$

$270 \div 5$

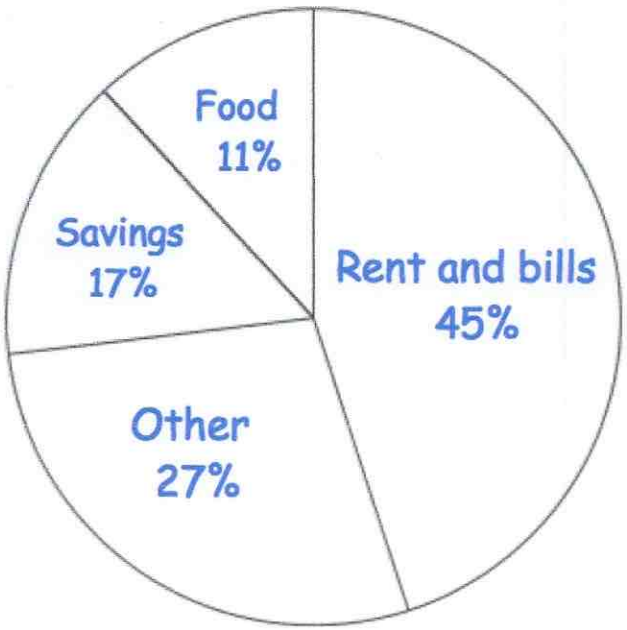
$5 \overline{)270}$ → 054

54

.....

(2)

11. The pie chart shows information about how Mr.Jenkins spent his salary for July.



He was paid £2000 in July.

Work out how much Mr.Jenkins spent on rent and bills.

45% of 2000

10% → 200

40% → 800

5% → 100

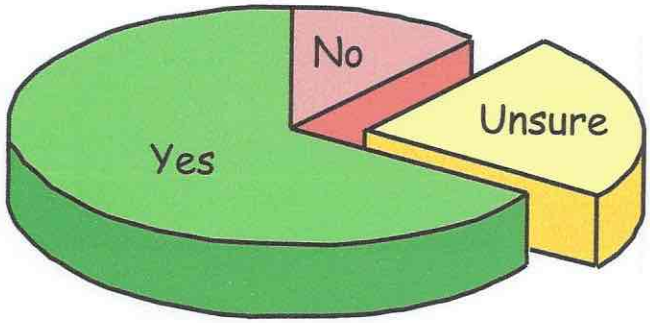
+

900

£ 900

(2)

12. The people living in a street were asked if they wanted new street lights.
They could answer: yes, no or unsure.
This pie chart shows the results.

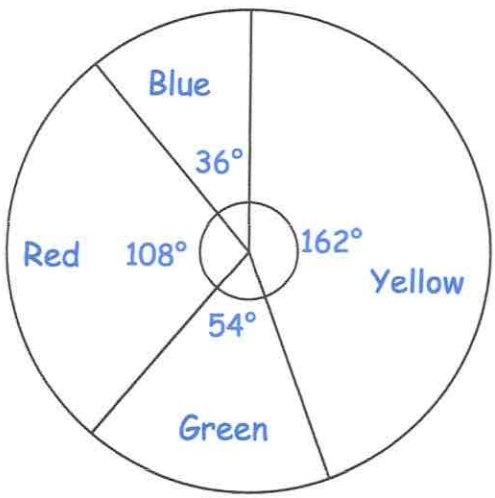


Explain why the diagram is misleading.

As the 3D Pie Chart is angled, the sectors at the front (Yes) seem much larger than those at the back (No)

(1)

13. The pie chart gives information about the colour of sweets in a jar.



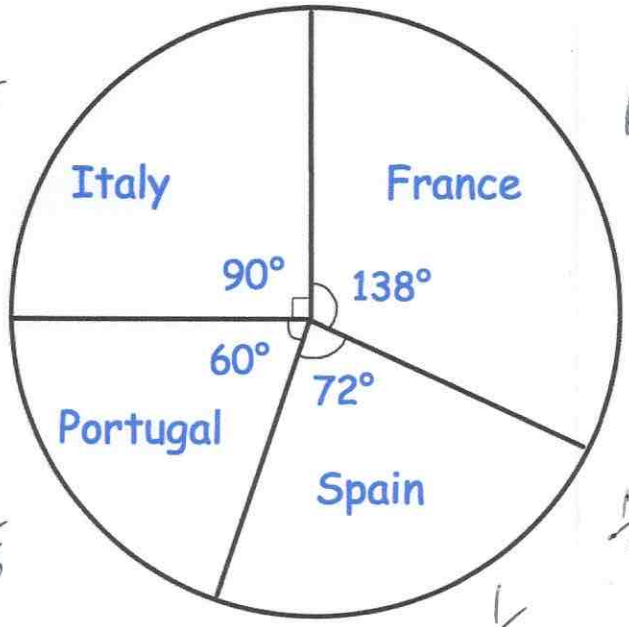
Find the ratio of the number of yellow sweets to the number of blue sweets.
Give your answer in its simplest form.

$162 : 36$
$81 : 18$
$9 : 2$

9 : 2

(2)

14. The pie chart shows the holiday destinations of 60 people.



$\frac{1}{4}$ of 60 = 15

$\frac{1}{4}$

60 - 37 = 23

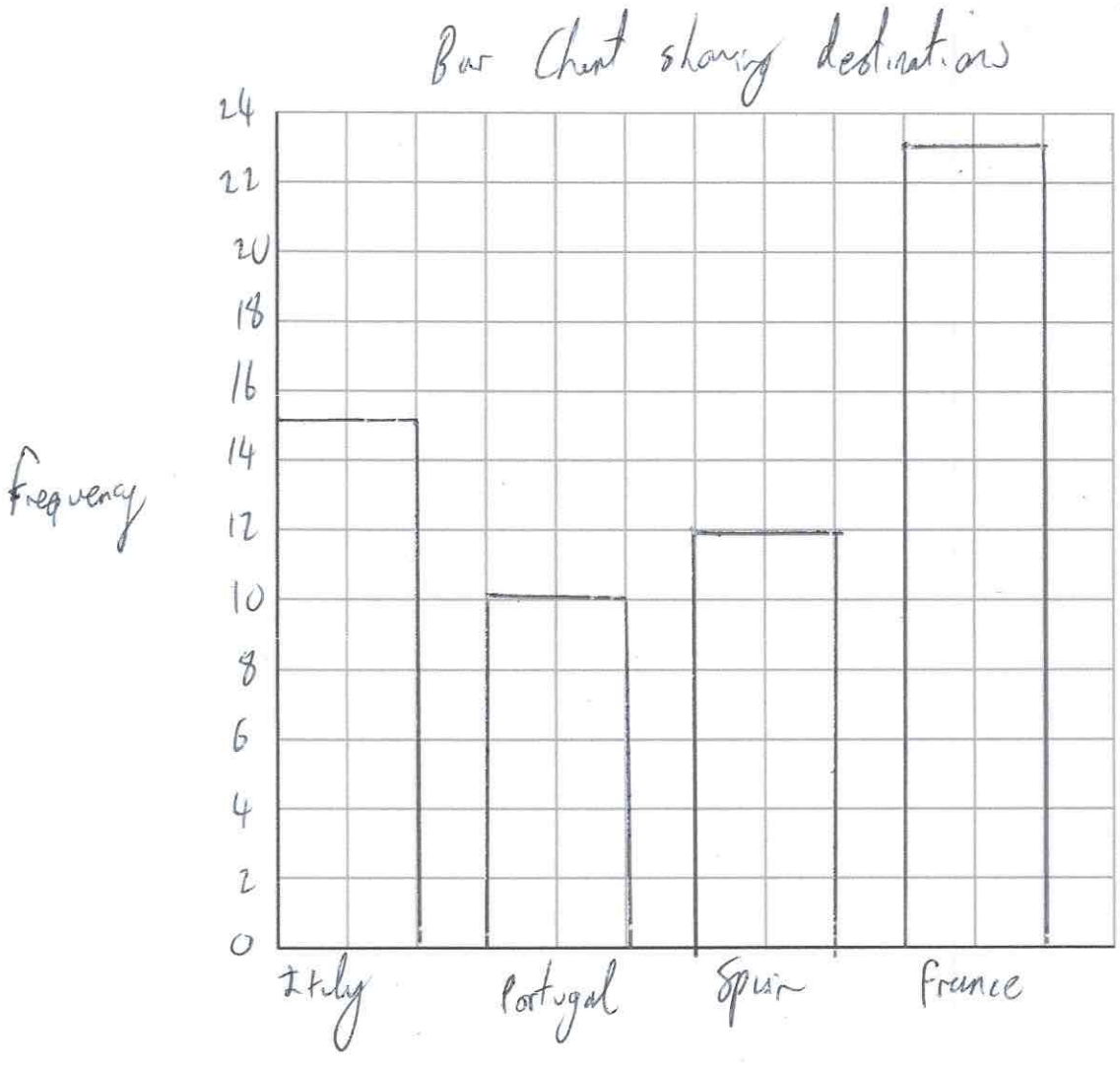
$\frac{1}{6}$ of 60 = 10

$\frac{1}{6}$

$\frac{1}{5}$ of 60 = 12

$\frac{1}{5}$

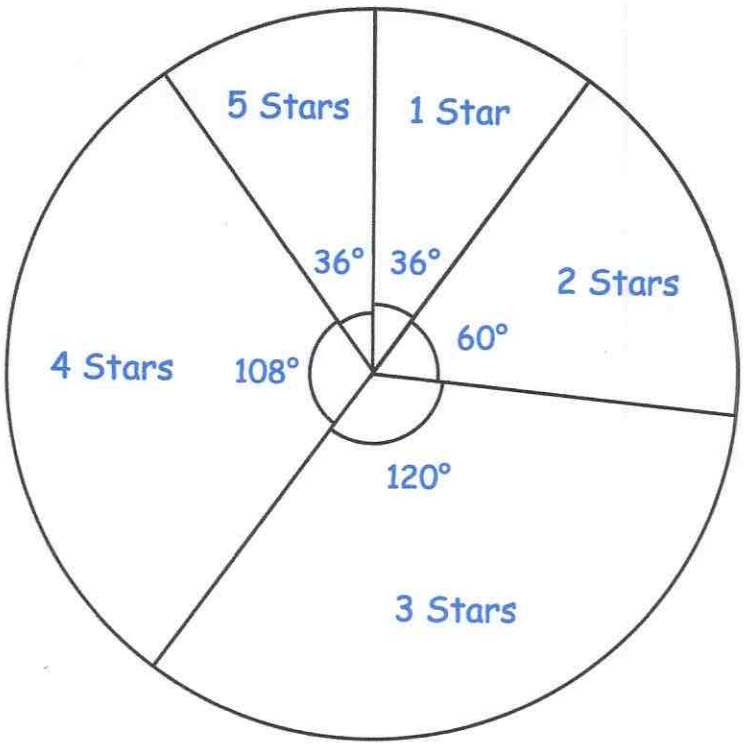
Draw a bar chart to represent this information.



(4)

15. A website has reviewed all the restaurants in a town.
Each restaurant is given a rating from 1 star to 5 stars.

The pie chart shows information about the ratings the restaurants received.



9 restaurants received a 4 star rating.

Work out how many restaurants are there in the town in total.

$108 \div 9 = 12°$ per restaurant

$360 \div 12 = 30$

30

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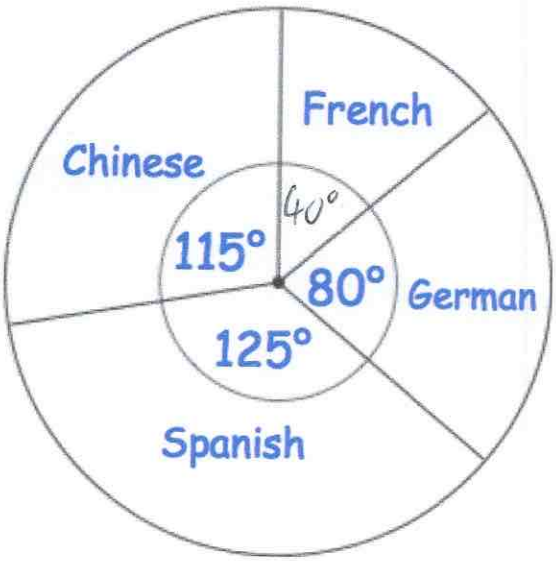
(4)

16. The pie chart shows information about the languages studied in a school.
There are 648 students in the school.
Each student studies one language.



$360 - (115 + 80 + 125)$
$= 40°$

How many more students study Chinese than French?

Chinese $\frac{115}{360}$ of $648 = 207$

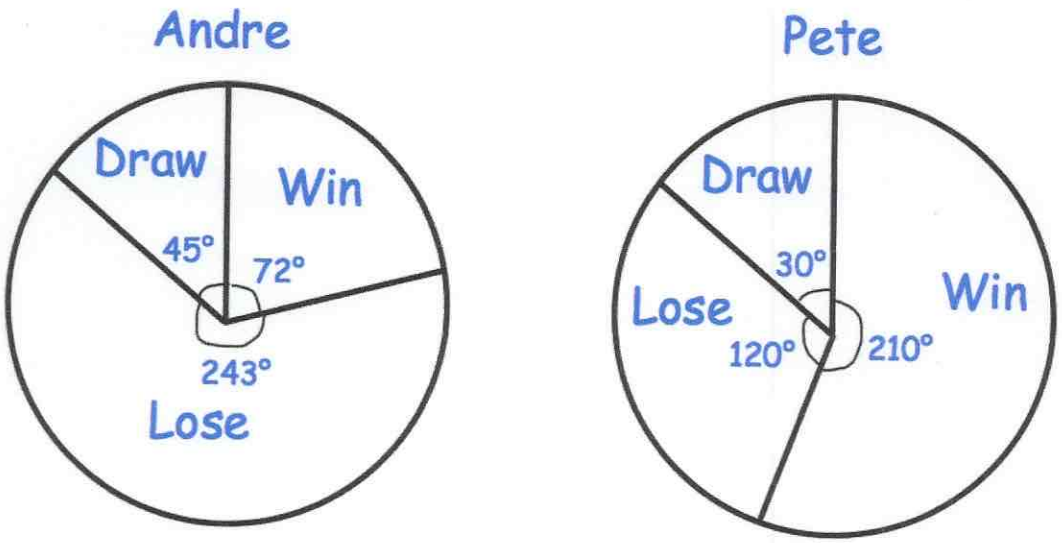
French $\frac{40}{360}$ of $648 = 72$

$207 - 72 = 135$

135

(4)

17. The pie charts show information about the results of chess matches that two players have played in over the course of a year.



Andre drew 5 matches.

(a) How many matches did Andre win?

45° → 5 matches
90° → 10
180° → 20
360° → 40 (total)

$\frac{72}{360} = \frac{1}{5}$

$\frac{1}{5}$ of 40 = 8

8

(2)

Edward says "the pie charts show that Pete won more matches than Andre."

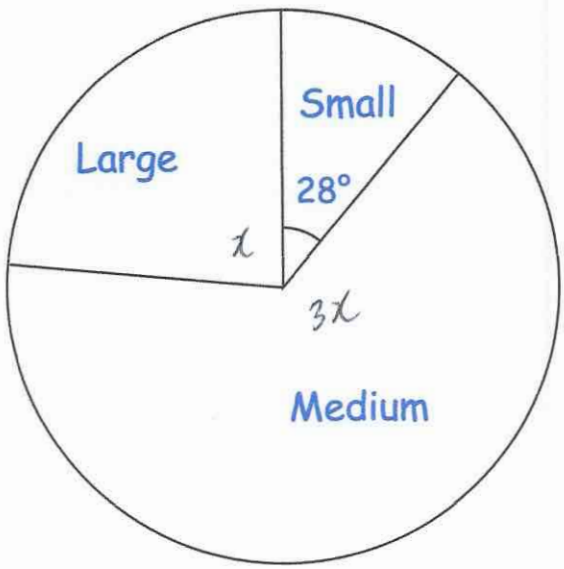
(b) Is Edward correct?
You must explain your answer.

As we do not know how many matches Pete played, we do not know how many he won. He did win a higher proportion, we do not have enough information to find the number of matches won by Pete.

(1)

18. Henry sells small, medium and large hats.

The pie chart below shows information about the 5760 hats he sold last year.



Not drawn accurately

Henry sold three times as many medium hats than large hats.

Work out how many medium hats were sold.

$360 - 28 = 332°$

$4x = 332$

$x = 83$

$3 \times 83 = 249°$

$\frac{249}{360} \times 5760 = 3984$ (medium)

3984

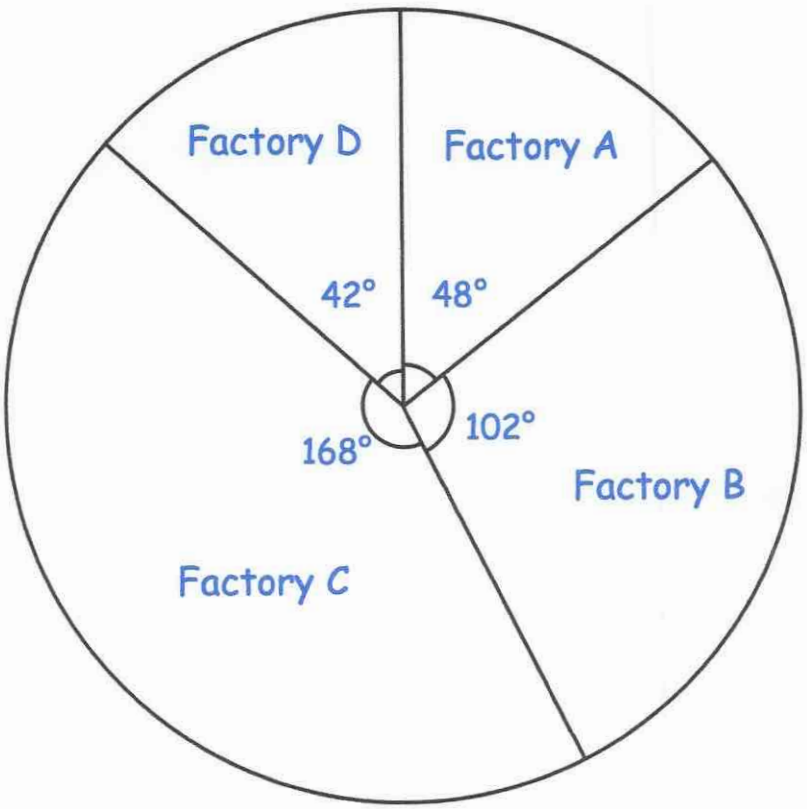
.....

(4)

19. A company employs staff at 4 factories.

The pie chart shows information about where the staff are employed.

Not drawn accurately



There are 234 more staff are employed at Factory B than Factory A.

Work out how many staff are employed at Factory C.

$102^\circ - 48^\circ = 54^\circ$

$54^\circ \rightarrow 234$

$1^\circ \rightarrow \frac{13}{3}$

$360^\circ \rightarrow 1560$

$\frac{168}{360} \times 1560 = 728$

728

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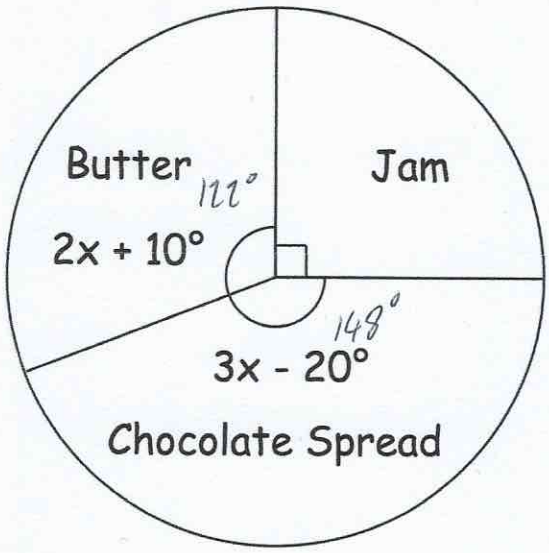
(3)

20. A radio station surveyed their listeners about how they prefer their toast.

The pie chart shows information about the responses.



11250 listeners preferred their toast with jam.

Work out how many more listeners preferred their toast with chocolate spread than with butter.

$(2x + 10) + (3x - 20) + 90 = 360$

$5x + 80 = 360$

$5x = 280$

$x = 56°$

$11250 \times 4 = 45000$ (total)

$\frac{148}{360} \times 45000 = 18500$

$\frac{122}{360} \times 45000 = 15250$

$18500 - 15250 = 3250$

3250

.....

(5)