1 At a country park there is a house, a museum and a garden.

The table shows the prices per person to visit the park.

	Price per person
Garden only	Free
House and museum	£12.50
House only	£8
Museum only	£7

One day, 480 people visit the park.

67 visit the garden **only**.

40% visit the house **and** the museum. $\frac{40}{100} \times 480 = 192$

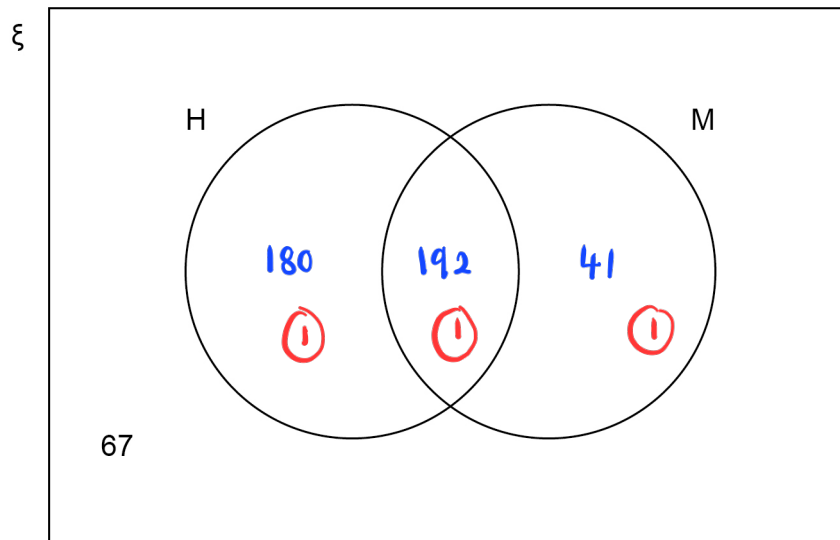$\frac{3}{8}$ visit the house **only**. $\frac{3}{8} \times 480 = 180$

The rest visit the museum **only**. $480 - 67 - 180 - 192 = 41$

In total, how much do the 480 people pay to visit the park?

You may use the Venn diagram to help you.

[5 marks]

ξ

H

M

180   192   41

67

$$192 \times 12 \cdot 5 \quad + \quad 180 \times 8 \quad + \quad 41 \times 7$$

$$= \quad 2400 \; + \; 1440 \; + \; 287 \quad \textcircled{1}$$

$$= \; 4127 \quad \textcircled{1}$$

Answer £ _____ 4127

$$192 \times 12 \cdot 5 \quad + \quad 180 \times 8 \quad + \quad 41 \times 7$$

$$= \quad 2400 \; + \; 1440 \; + \; 287 \quad \textcircled{1}$$

2 In a group of 98 students

25 study both Art and French
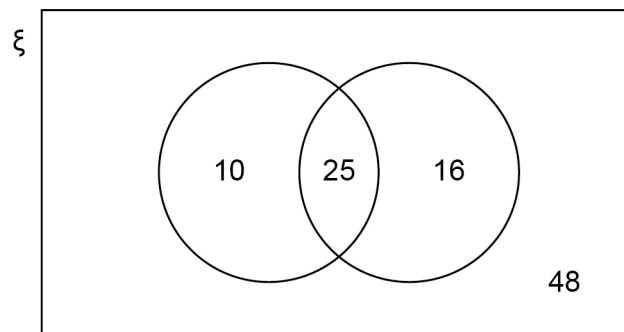
10 study Art but do not study French

41 study French.

Joel draws this Venn diagram to represent the information.

ξ = the group of 98 students

A = the students who study Art

F = the students who study French

Make **two** criticisms of his diagram.

[2 marks]

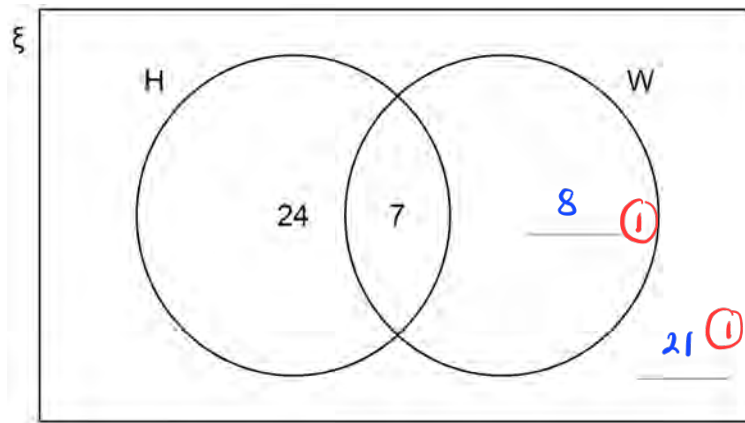Criticism 1 ___No labels A and F on Venn diagram ①___

Criticism 2 ___Total group is more than 98 ①___

3   Here is a Venn diagram.

ξ = 60 people

H = people who own a gaming headset

W = people who own a smart watch

3 (a)   15 of the people own a smart watch.

Complete the Venn diagram.

[2 marks]

3 (b)   One of the 60 people is chosen at random.

What is the probability that they own **both** a gaming headset and a smart watch?

[1 mark]

Answer $\frac{7}{60}$ ①

3 (c)   Marek is going to buy a gaming headset that costs £35

He already has £19

He plans to save the rest in two equal amounts over the next two weeks.

He uses this method to work out in pounds how much to save each week.

$$35 - 19 \div 2$$

What is wrong with his method?

[1 mark]

Needs bracket around 35 -19. ①

4   Here is some information about 120 people who visit a shop.

$\frac{3}{4}$ of the people buy neither a coat nor a dress.

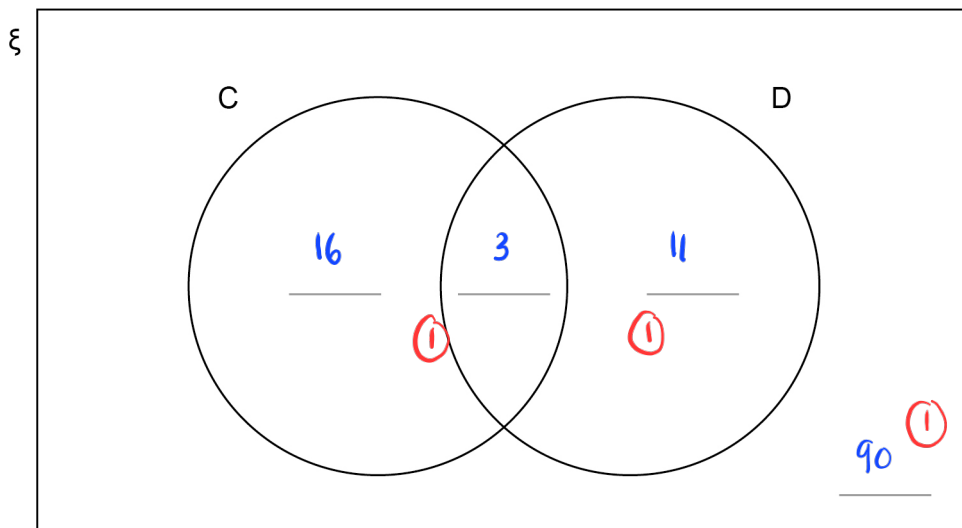19 people buy a coat.

14 people buy a dress.

Complete this Venn diagram to represent the information.

[3 marks]

ξ = 120 people who visit the shop

C = people who buy a coat

D = people who buy a dress

$\frac{3}{4} \times 120 = 90$

$120 - 90 = 30$

$19 + 14 = 33$

$33 - 30 = 3$