

DESKTOP TASK

THE COMMUNITY CENTRE

QUESTION & ANSWER BOOKLET

Learner's Name	
Centre Name	
Centre Number	
Date of Assessment	
Tutor's Name	
Mark Achieved	
Level Achieved	

APPLICATION OF NUMBER LEVEL 2

EXEMPLAR MATERIAL – PHOTOCOPIABLE

ISSUED SEPTEMBER 2005

INSTRUCTIONS

WHAT DO I DO?

There are 40 questions with one mark for each question.

Try to answer as many questions as you can.

WHAT WILL I NEED?

You will need a pen, pencil and a centimetre ruler.

WHAT IS THE TIME ALLOWED?

1 HOUR 30 MINUTES

(To include 15 minutes reading time)

Do not spend too long on a question that you find difficult. You can always come back to it later.

NOTES

You may not use a calculator.

CAN I WRITE MY WORKING OUT IN THIS BOOKLET?

Yes you can but please ensure your answer is clearly marked in pen in the box where indicated.

3. What is the ratio of the total car park area to the playing fields area?

Answer	:
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4. A parking space is 2.5m by 5.0m. Below is a scale drawing of part of the car park.

Mark on the drawing the maximum number of parking spaces that will fit and number them.



Scale 1: 250

5. The distance from the Hall to the town centre is 1.5 miles.

If 1 mile equals 1.609 kilometres, what is the distance in kilometres (to the nearest 0.1 kilometre)?

Answer	km
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6. The Council uses a formula to calculate the number of sports pitches that each town should have.

The formula is: $N = (0.001 \times P) + 1$

where N = number of pitches
and P = population of town

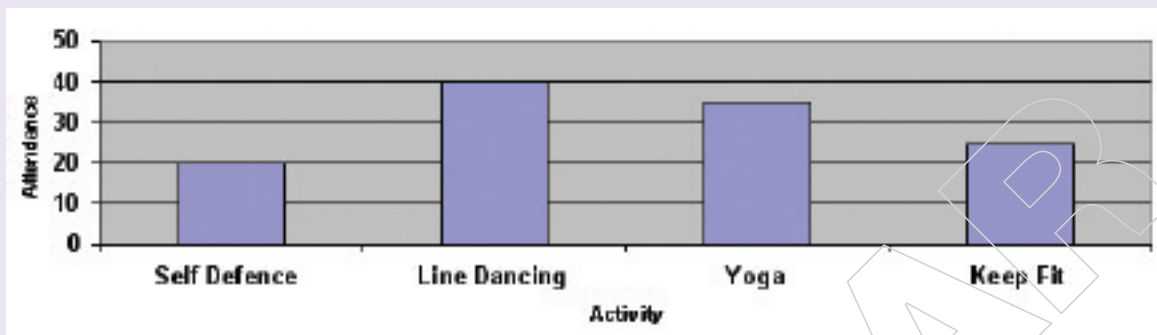
How many pitches (to the nearest whole number) should there be in a town with a population of 5102?

Answer

7. A survey was carried out of the attendance at four activities in the Hall.

The results are shown below.

Attendance at Activities in the Hall



What is the modal activity?

Answer

8. The survey was sent to every household in the town and 5 out of every 8 households returned the survey. What is this as a percentage?

Answer %

Questions 9 – 11 are about electricity usage in the Community Hall. The table below shows how much electricity was used in each quarter of the last four years.

Year	2000				2001				2002				2003			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Electricity Usage (Units)	300	270	325	350	295	265	315	340	305	275	340	360	310	280	350	375

9. What is the mean usage in quarter 1 over the four years?

Answer _____ **units**

10. What is the median usage in 2001?

Answer _____ **units**

11. What is the range of the usage in 2002?

Answer _____ **units**

At the front of the Hall there are 2 large windows, each measuring 3.5 metres by 6 metres.

12. A local window cleaner charges a call out fee of £3 plus 25p per square metre of glass. How much would it cost to have both the Hall's front windows cleaned?

Answer £

13. The glass in the windows takes up 60% of the surface area of the front of the Hall. How large is the area at the front that is **not** made of glass?

Answer m²

14. A company charges for hall insurance according to the formula:

$$C = (4.5 \times A) + (0.1 \times V)$$

where C = annual charge (£)

A = floor area (square metres)

V = total value of equipment kept on site (£)

The floor area of the hall is 600 square metres and the equipment has a value of £6700.

What would the insurance charge be?

Answer £

15. The fraction of the maintenance costs spent on grass cutting is $\frac{3}{8}$.

What is this as a percentage?

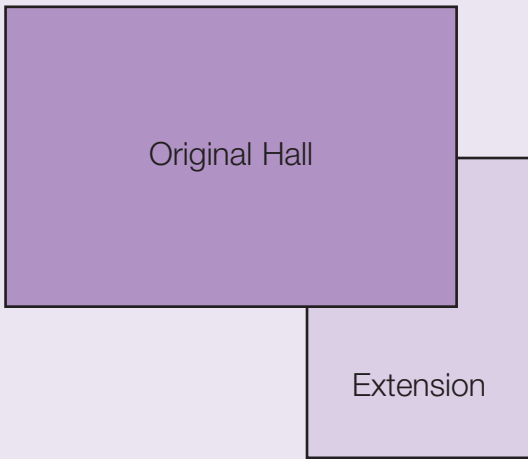
Answer %

16. The groundsman is mixing fertiliser for the pitch. He uses the ratio 1 part fertiliser concentrate to 24 parts water.

He needs three litres of mixed fertiliser. How much concentrate should he use (in ml)?

Answer ml

The Community Centre Committee has decided to enlarge the hall by building an extension (shown below).



Scale 1:500

17. The Committee receives an estimate from a builder of £30 000 to do the work. At the time of the estimate £1 was worth 1.44 euros. How much was the estimate in euros?

Answer **euro**

18. The Local Council will support the project. The Council's contribution will be in proportion to the Committee's contribution, in the ratio of 2 to 3. If the building cost of the extension is £30 000, how much will the council pay?

Answer **£**

19. The Committee decides to lay wooden flooring over the whole extension. Using the scale drawing above, what is the area of flooring needed in square metres?

Answer **m²**

20. The architect says that the area of window space on the extension should equal $\frac{1}{10}$ of the total floor area.

Which of these is the correct formula?

where W = area of window (square metres)
and F = area of floor (square metres)

A) $W = F \times 10$

B) $W = \frac{F}{10}$

C) $F = \frac{W}{10}$

D) $W = 10 \times F$

Answer

21. The architect also says that the area of ventilation should be $\frac{3}{50}$ of the total floor area. Which of these answers is $\frac{3}{50}$ written as a decimal?

A) 0.30

B) 3.50

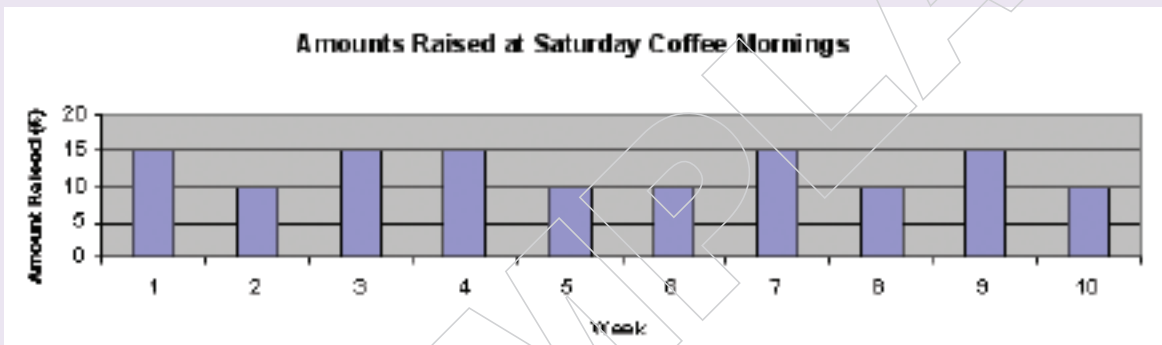
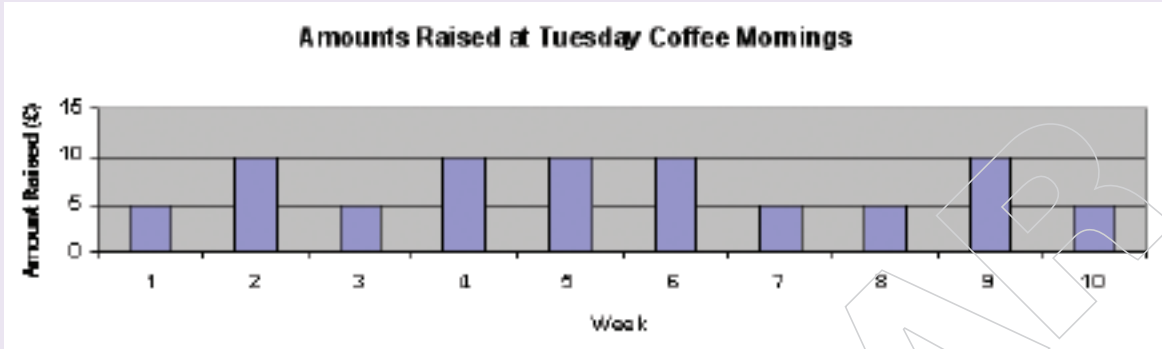
C) 0.06

D) 0.02

Answer

Questions 22 to 24 are about fund-raising.

The Committee decides to hold coffee mornings twice a week for ten weeks to raise money for the extension. The amounts raised on Tuesdays and Saturdays are shown in the bar charts below.



22. What is the mean amount raised on Tuesdays?

Answer £

23. What is the mean amount raised on Saturdays?

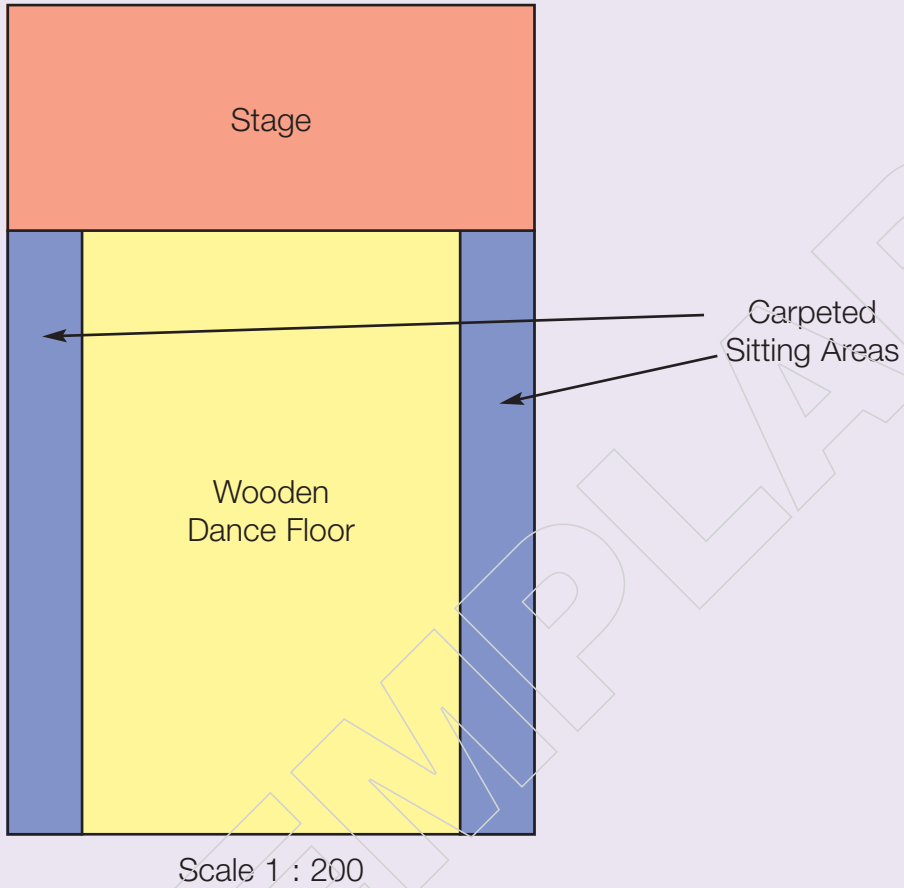
Answer £

24. How much more is raised, on average, on the better day?

Answer £

The Committee decides to hold a dance in the hall.

Questions 25 & 26 refer to this drawing



25. What is the total area (in square metres) provided for sitting?

Answer **m²**

26. Local regulations require there to be an average of at least 1m² of floor space for each dancer.

What would be the maximum number of dancers permitted on the dance floor?

Answer

27. The Committee needs to sell at least 120 tickets to avoid making a loss. The day before the event, 90 tickets have been sold. What percentage of the 120 tickets have been sold?

Answer	%
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28. A traditional Irish dance requires people to dance within a 9 yard wide square.

If 1 yard = 0.914 metres, what is the length of the sides of the square in metres? (to the nearest metre)

Answer	m
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29. The event lasts 4 hours.

The band plays from 8 pm until 9.15 pm and from 10.15 pm until 11.30 pm. What is the ratio of the amount of time the band plays to the amount of time when the band does not play? (Simplify your answer as much as possible)

Answer

30. Cheese and wine (or a soft drink) are provided in the interval. The amounts that the committee spent and the numbers of people served are shown below.

	Adult	Child
Cheese	£25	£30
Wine/Soft drink	£65	£10
Number of Servings	60	80

How much greater is the mean amount spent on the adults than the mean amount spent on the children?

Answer	£
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31. A bar is provided at the event and the organisers buy beer in 10 litre containers. However it has to be served in pint glasses.

Using the conversion factors

1 litre = 0.22 gallons
and 1 gallon = 8 pints,

how many complete pint glasses can be filled from one 10 litre container?

Answer

32. When working out the cost of a ticket for the event the organisers use the formula

$$C = \frac{F + B + H}{N} + D$$

where

- C = cost of ticket (£)
- F = total cost of food (£)
- B = cost of band (£)
- H = hall hire charge (£)
- N = number expected to attend
- D = donation to Community Centre funds

If $F = £155,$
 $B = £240,$
 $H = £85,$
 $N = 120$
and $D = £1,$

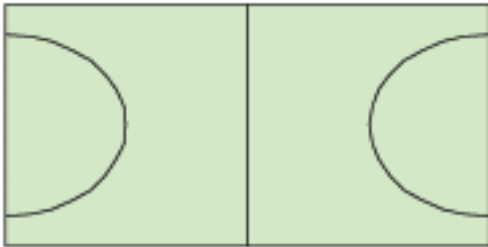
what is the cost of a ticket?

Answer

SECTION E : SPORT AND RECREATION FACILITIES

The Community Centre has an artificial turf pitch (ATP).

A plan of the ATP is shown below.



Scale 1:500

33. At each end of the ATP there is a goal that would be 0.6 cm wide on the plan.
How wide would the goal be on the actual pitch?

Answer **m**

34. At each end of the ATP there is a semi-circular goal area, which requires special turf.

The radius of the goal area is 8m (to the nearest metre).

Using the formula:

$$\text{Area of circle} = \pi r^2$$

(where r = the radius and π is approximately 3.1)

Calculate the approximate total area of special turf required for the goal areas.

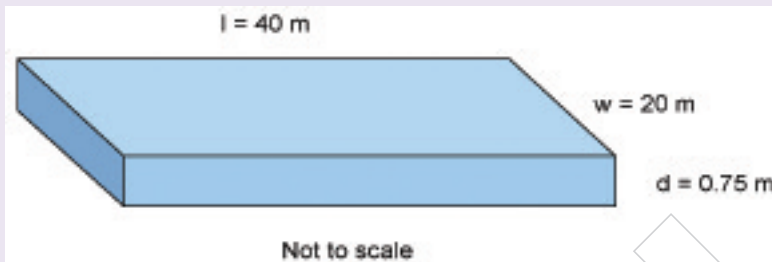
Answer **m²**

35. On another pitch the two semi-circular areas take up $\frac{3}{20}$ of the total playing area.

What is this as a percentage of the total playing area?

Answer	%
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36. The ATP is built on top of a tarmac shock pad (shown below).



Using the formula:

$$\text{Volume} = l \times w \times d$$

What is the volume (in cubic metres) of tarmac required?

Answer	m³
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37. The local team scores the following number of goals in 21 home matches during a season.

1, 3, 1, 2, 2, 2, 4, 0, 1, 1, 5, 0, 1, 1, 2, 2, 0, 2, 1, 2, 3

What is the team's median home score for the season?

Answer

38. A fruit drink is provided for the players at half-time in the matches. The fruit concentrate is diluted in the ratio

1 part concentrate : 7 parts water

The drink is served in plastic cups containing 160ml.

How much fruit concentrate is needed in order to give all 14 people a cup of fruit drink ?

Answer ml

39. The players organise a coach trip to watch an international match in Dublin. Tickets for the match cost 21 euro.

If the exchange rate is 1 euro = 69p, what does a ticket cost in pounds and pence?

Answer £

40. The Hall will be used for yoga classes. Each student needs a square space 2.9m wide. The available space in the Hall is 14m by 25m.

What is the maximum number of students that can fit in the Hall?

Answer

END OF TASK

EXAMPLE

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