

METHODIST GIRLS' SCHOOL (Primary)
Preliminary Examination 2006
Primary 6

Mathematics

Booklet A

Name: _____ ()

Class: P 6. _____

Total time for Booklets A, B1 and B2: 2h 15 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW THE INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the Optical
Answer Sheet.

(20marks)

1. Which one of the following numbers is the smallest?

- (1) 0.3
- (2) 0.12
- (3) 0.048
- (4) 0.108

2. $\frac{7}{12} \div 4$ is the same as _____.

- (1) $\frac{1}{4} \times \frac{7}{12}$
- (2) $4 \times \frac{7}{12}$
- (3) $\frac{1}{4} \times \frac{12}{7}$
- (4) $4 \times \frac{12}{7}$

3. A factory worker is paid \$20.50 a day.
If he works everyday (including weekends) for 6 weeks, how much will he
be paid?

- (1) \$123.00
- (2) \$143.50
- (3) \$615.00
- (4) \$861.00

4. Convert $\frac{1}{5}$ h to seconds.

- (1) 12s
- (2) 20 s
- (3) 200s
- (4) 720 s

5. $1.52 \text{ kg} = 1 \text{ kg} - 20 \text{ g} + \boxed{} \text{ kg}.$

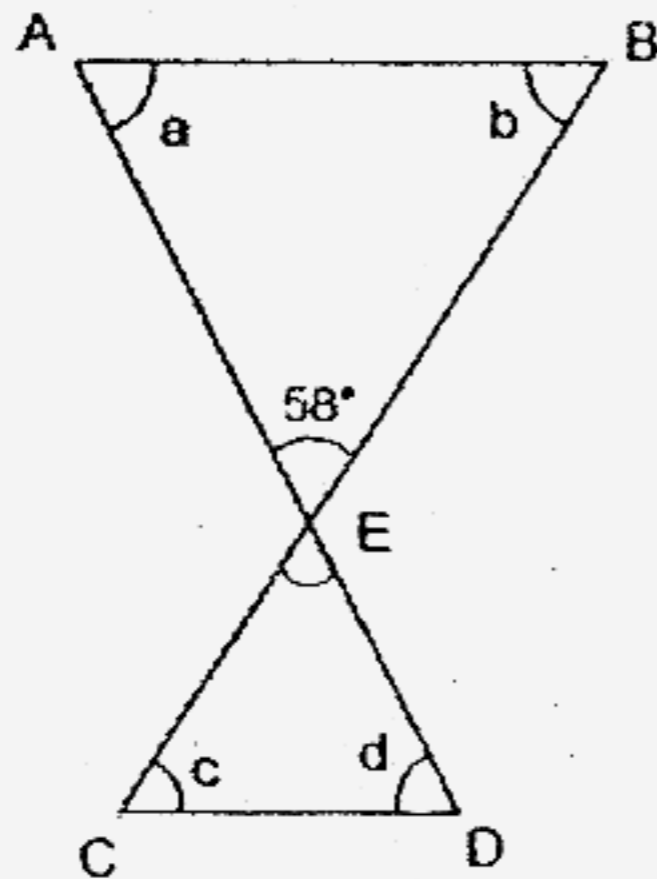
What is the missing number in the box?

- (1) 0.32
- (2) 0.50
- (3) 0.54
- (4) 0.72

6. Given that $b = 3$, find the value of $\frac{2+b}{7-b} + 2b$.

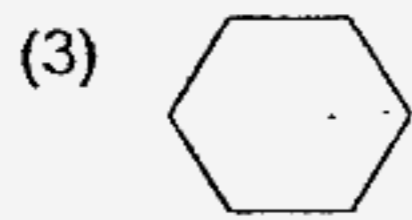
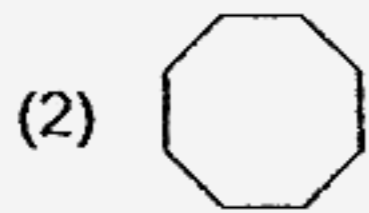
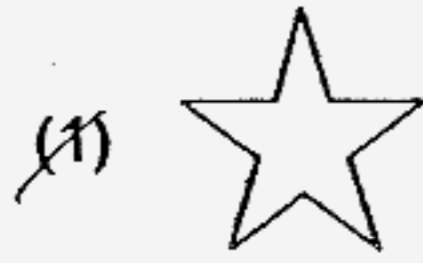
- (1) $6\frac{1}{4}$
- (2) $6\frac{1}{2}$
- (3) $7\frac{1}{4}$
- (4) $7\frac{1}{2}$

7. In the figure below, not drawn to scale, AED and BEC are straight lines. What is the value of $\angle a + \angle b + \angle c + \angle d$?

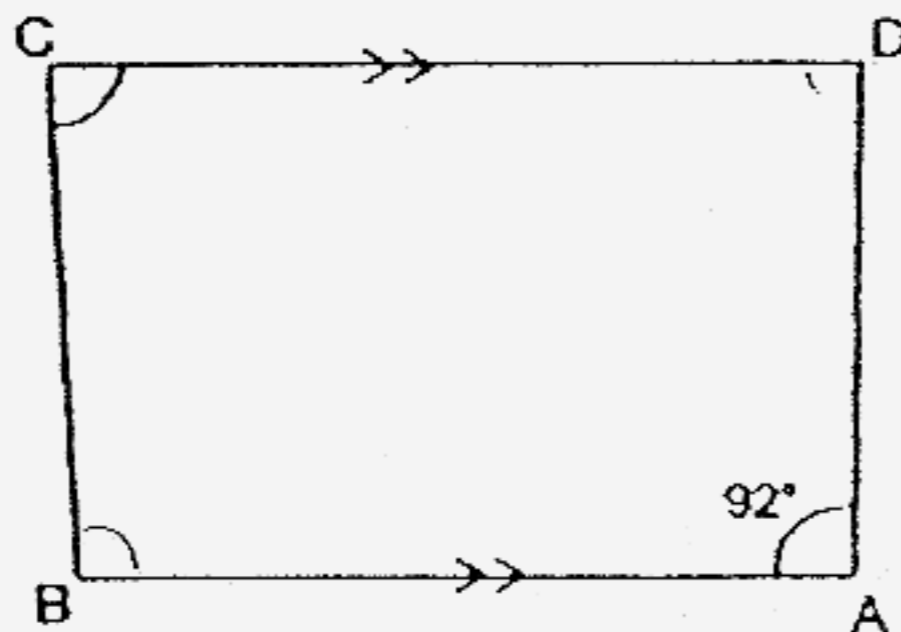


- (1) 122°
- (2) 244°
- (3) 302°
- (4) 360°

8. Which one of the following shapes can tessellate?



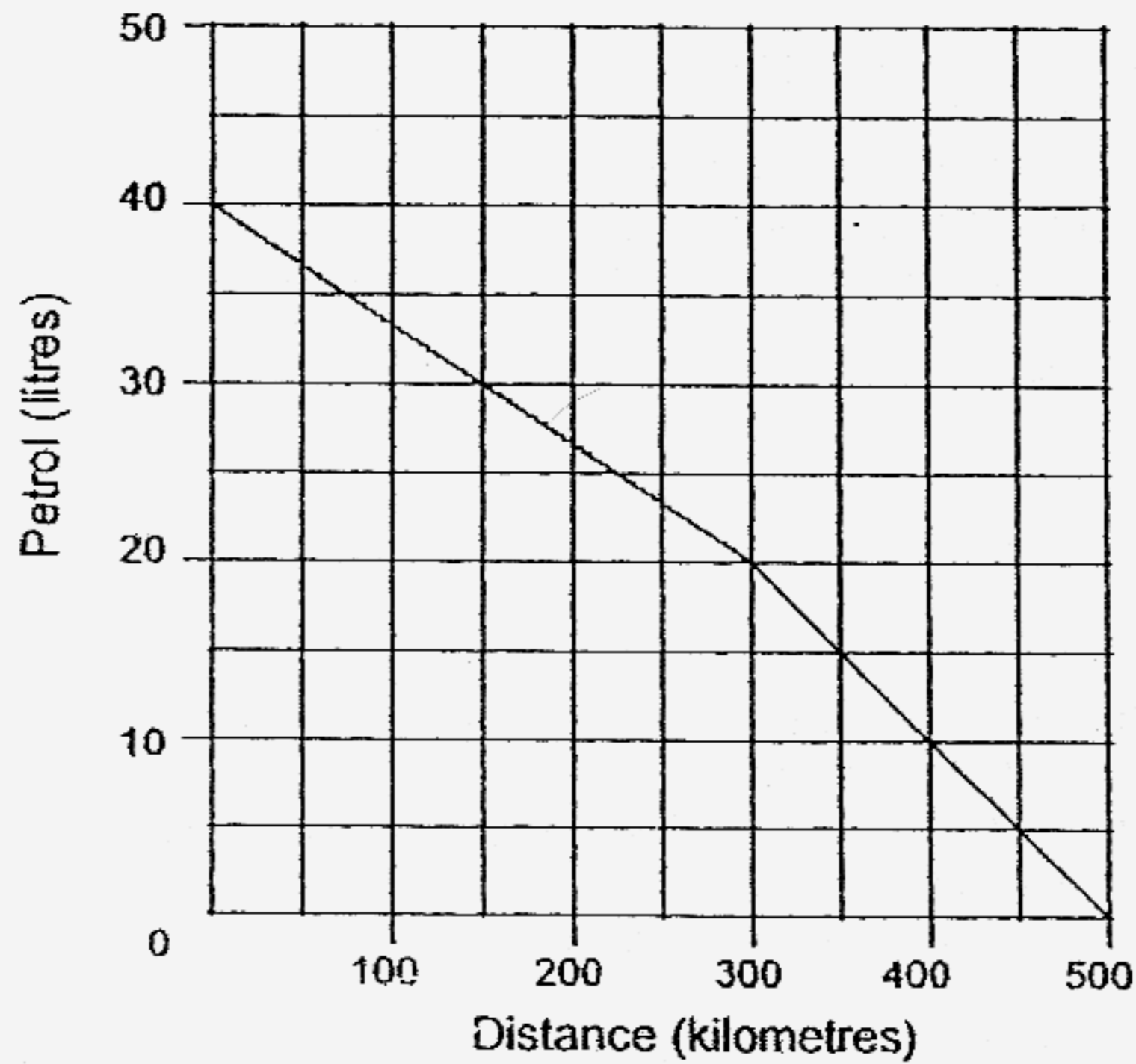
9. The figure below is not drawn to scale.
ABCD is a trapezium. AB is parallel to DC.
If $\angle BAD = 92^\circ$ and $\angle ADC + \angle ABC = 183^\circ$, what is the value of $\angle BCD$?



- (1) 85°
- (2) 88°
- (3) 92°
- (4) 95°

The graph below shows the distance travelled and the amount of petrol in the tank of a car.

Study the graph carefully and answer Questions 10 and 11.



10. How far had the driver travelled when he ran out of petrol?
- (1) 100 km
 - (2) 300 km
 - (3) 400 km
 - (4) 500 km
11. How much petrol *was used* when the car had travelled 350km?
- (1) 15 litres
 - (2) 20 litres
 - (3) 25 litres
 - (4) 35 litres

12. Evaluate $24 - 6 \times 0 + 6 \div 3$.

- (1) 8
- (2) 2
- (3) 20
- (4) 26

13. When it is 09 00 in Singapore, it is 08 00 in Bangkok.
A plane took off from Singapore at 10 45 and flew to Bangkok.
The flight from Singapore to Bangkok took 2h 30 min.
At what time did the plane land in Bangkok?
Give your answer according to the time in Bangkok.

- (1) 10 30
- (2) 11 30
- (3) 12 15
- (4) 13 15

14. Four tour buses departed from Town X on the same day and arrived in Town Y *the following day*.
The table below shows the departure time and the arrival time.
If Mr Mohammad wanted to travel from Town X to Town Y in the shortest possible time, which tour bus should he take?

| Tour Bus | Departure from Town X | Arrival at Town Y |
|----------|-----------------------|-------------------|
| A | 6.00 p.m. | 9.15 a.m |
| B | 7.30 p.m | 11.45 a.m |
| C | 11.00 a.m | 3.25 a.m |
| D | 9.50 a.m | 1.45a.m |

- (1) A
- (2) B
- (3) C
- (4) D

15. Wendy gave 30% of her salary to her mother.
Her mother spent 60% of the sum she was given.
What percentage of Wendy's salary had she left?

- (1) 12%
- (2) 18%
- (3) 30%
- (4) 40%

Questions 16 to 25 carry 1 mark each. Write your answers in the spaces provided.

For questions which require units, give your answers in the units stated.

(10 marks)

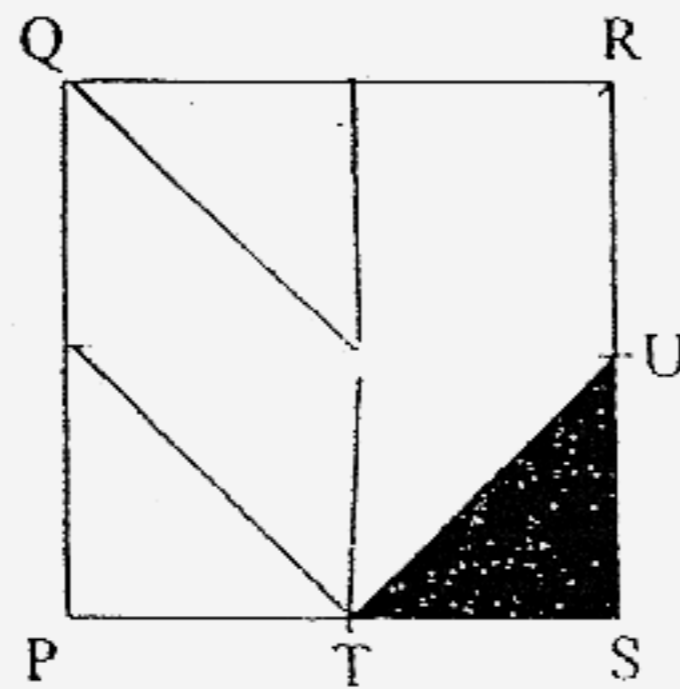
16. Express $8\frac{2}{7}$ as a decimal, correct to 2 decimal places.

Ans: _____

17. In $5 \times 7 + 4 \times 7 = \square \times 7 + 21$, what is the missing number in the box?

Ans: _____

18. PQRS is a square.
T and U are mid-points of sides PS and RS respectively as shown.
What fraction of the square is shaded?



Ans: _____

19. Lynn had \$15 and wanted to buy a few mugs.
If each mug cost \$1.20, what was the maximum number of mugs she could buy?

Ans: _____

20. Express 0.063 as a percentage.

Ans: _____ %

21. For every 3 pencils sold, a salesman receives 80 cents as his commission.
How many pens must he sell to receive a commission of \$20.80?
pencils

Ans: _____

Study the data given in the table below. Use it to answer questions 22 and 23.

| Fruits | Cost |
|-------------|--------------|
| Water-melon | 2 for \$5.55 |
| Mango | 1 for \$2 |
| Durian | 1 for \$6.00 |
| Orange | 4 for \$1.20 |

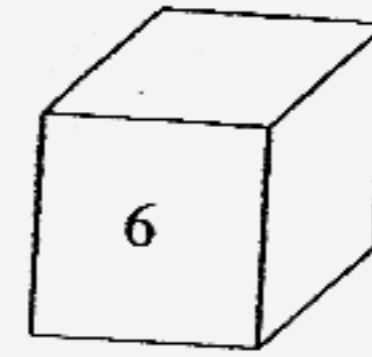
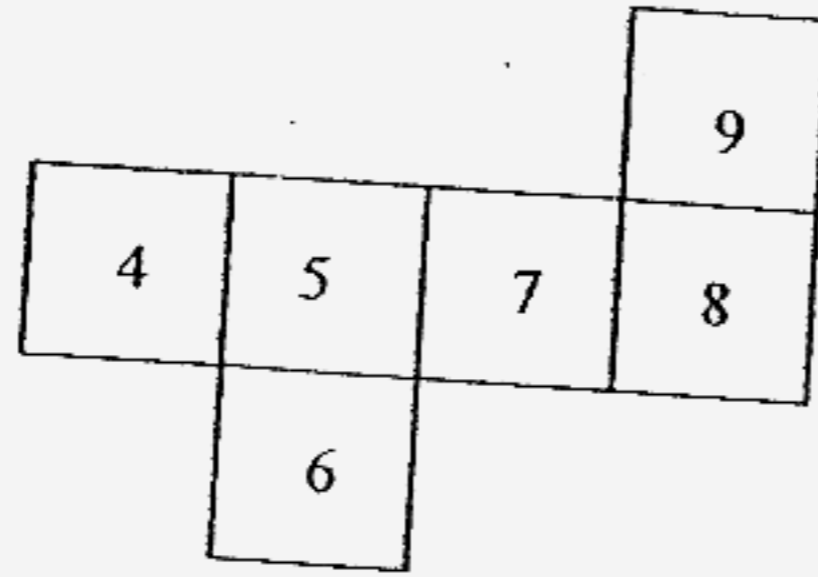
22. Jane bought 8 durians and 6 water-melons. How much must she pay?

Ans: \$ _____

23. Jimmy bought a certain number of mangoes. He found that he could buy 20 oranges with the same amount of money. How many mangoes did he buy?

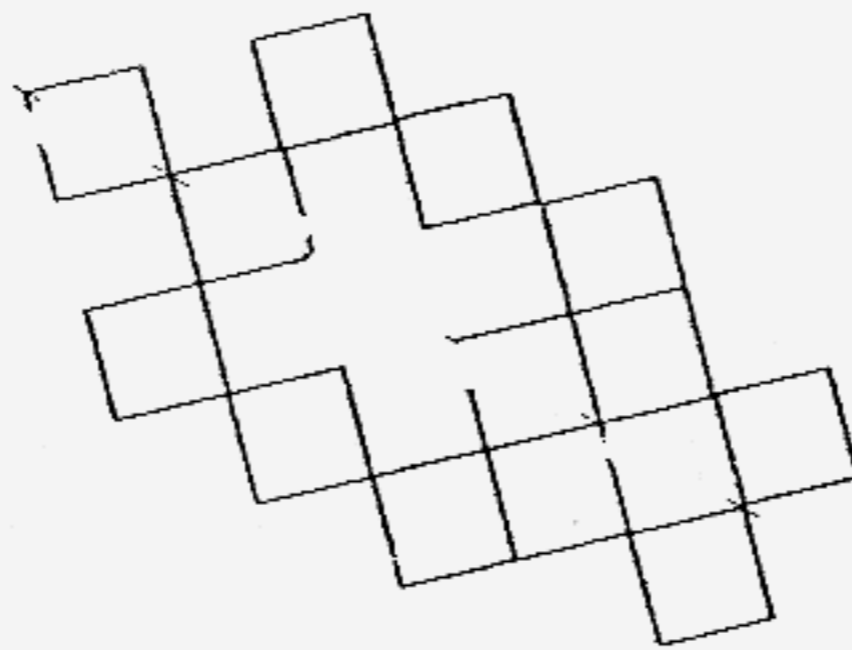
Ans: _____

24. The following is a net of the cube shown on the right.
What is the number on the face directly opposite the face numbered 6?



Ans: _____

25. Draw the line of symmetry for the figure below:



Questions 26 to 35 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided.

For questions which require units, give your answers in the units shaded.

(20 marks)

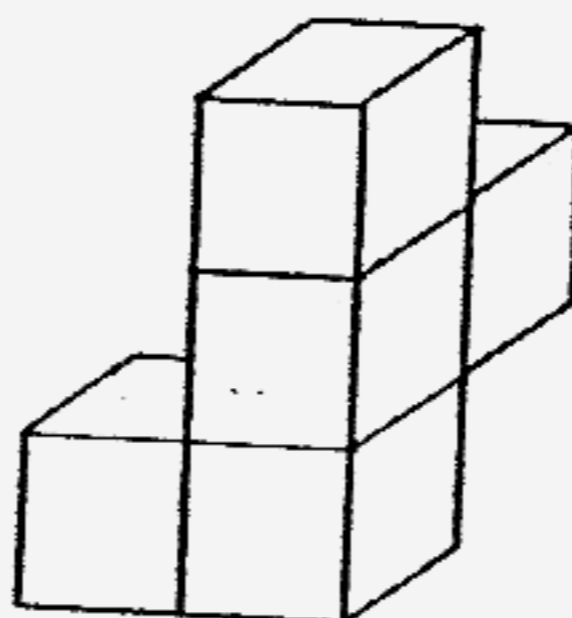
26. When I opened the newspaper this morning, the product of the 2 page numbers was 210.
What were the 2 page numbers?

Ans: _____

27. What is the maximum number of 5-cm cubes that I can cut from a wooden block measuring 35 cm by 17 cm by 23 cm?

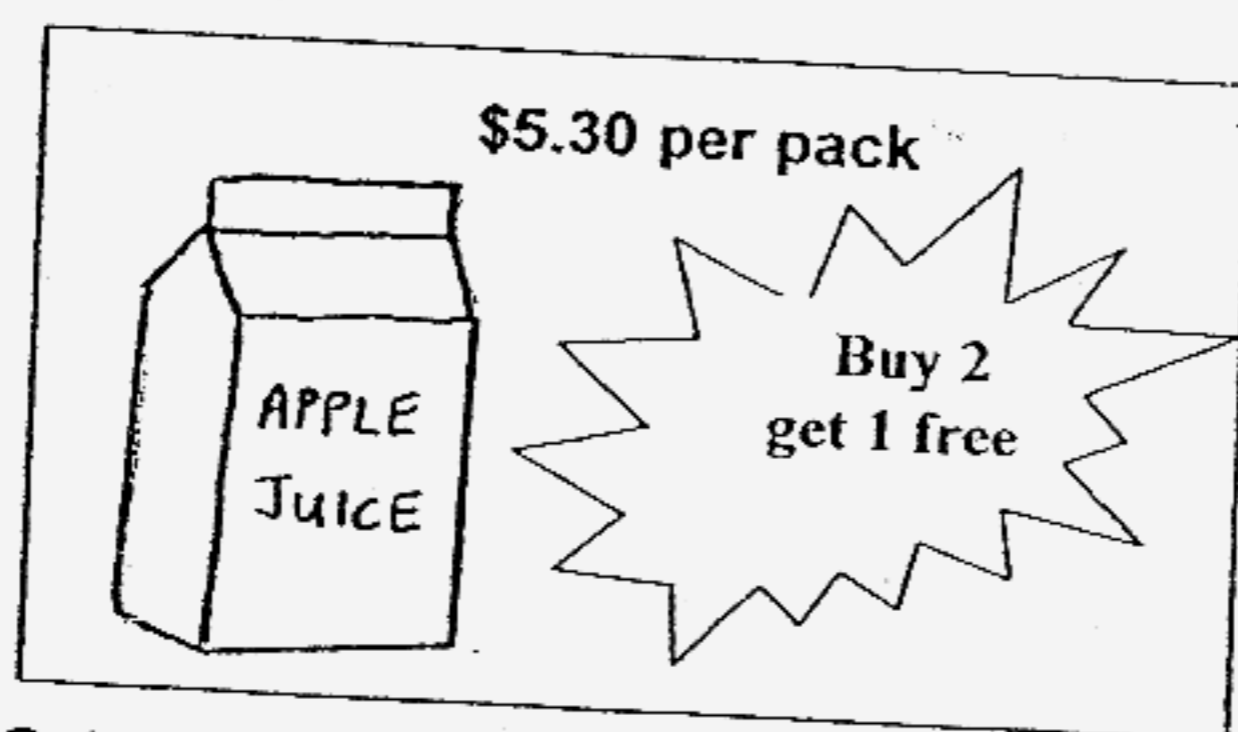
Ans: _____

28. The solid below, not drawn to scale, is made up of 3-cm cubes.
How many cubes must be added to form a cube of volume 729 cm^3 ?



Ans: _____

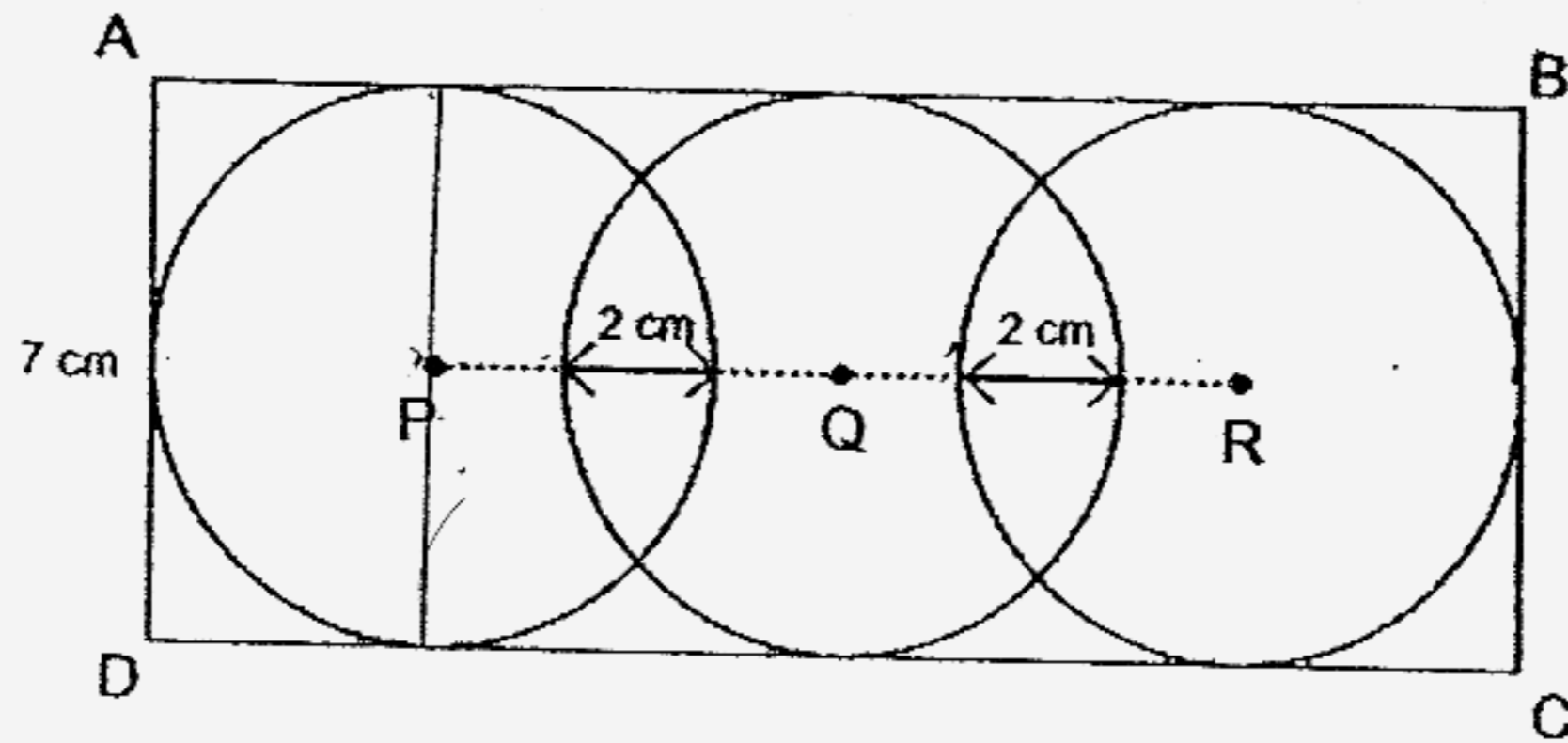
29.



Mrs Goh wants to buy 9 packs of apple juice.
What is the least amount of money she has to pay?

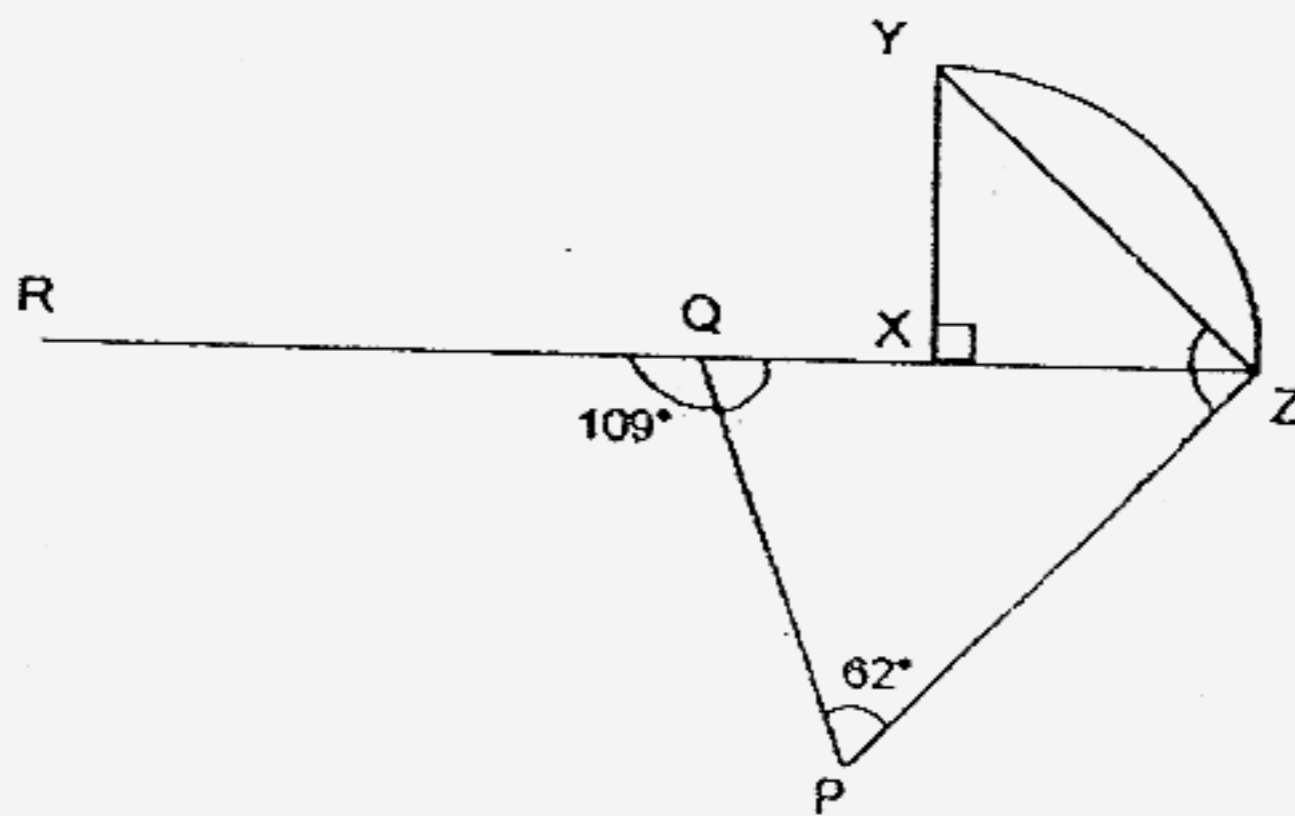
Ans: \$ _____

30. The figure below, not drawn to scale, shows 3 identical circles drawn in a rectangle ABCD. Points P, Q and R are centres of the 3 circles. If $AD = 7\text{ cm}$, what is the area of the rectangle?



Ans: _____ cm^2

31. In the figure below, not drawn to scale, XYZ is a quadrant. ZQR is a straight line. Find $\angle YZP$.



Ans: _____

32. In the number series 2, 4, 6, 8,,
2 is the first even number, 4 is the second even number, 6 is the third
even number and so forth.
What is the sum of the first 25 even numbers?

Ans: _____

33. There were 10 word problems in a Mathematics competition.
5 points were awarded for each correct answer and 3 points were
deducted for each incorrect answer.
If Fiona answered all 10 word problems and scored 26 points, how many
word problems did she answer correctly?

Ans: _____

34. Susan accidentally spilled some ink on her Results Slip. Part of her Mathematics and Science marks cannot be seen.

| RESULTS SLIP | |
|--------------|----|
| English | 87 |
| Mathematics | 9 |
| Science | |

Her total score is 264. What can be the lowest possible mark obtained for Science?

Ans: _____

35. The number of Amy's stickers is $\frac{5}{6}$ of the number of Evelyn's stickers. If Amy gives $\frac{1}{2}$ of her stickers to Evelyn, what will be the ratio of the number of Amy's stickers to Evelyn's stickers? Express your answer in the simplest form.

Ans: _____

SECTION B2

For questions 36 to 48, show your working clearly in the space provided below each question and write your answers in the spaces provided.

The number of marks available is shown in brackets [] at the end of each question or part-question.

(50 marks)

36. Mrs Chan has the same number of 50-cent coins and 20-cent coins. The value of the 50-cent coins is \$5.40 more than the value of the 20-cent coins.
What is the total value of all the coins?

Ans: _____ [3]

37. Mr Tan paid \$4.15 to send a parcel overseas. It cost him \$1.75 for the first 4 kg and 15¢ for each additional kilogram. What was the weight of the parcel?

Ans: _____ [3]

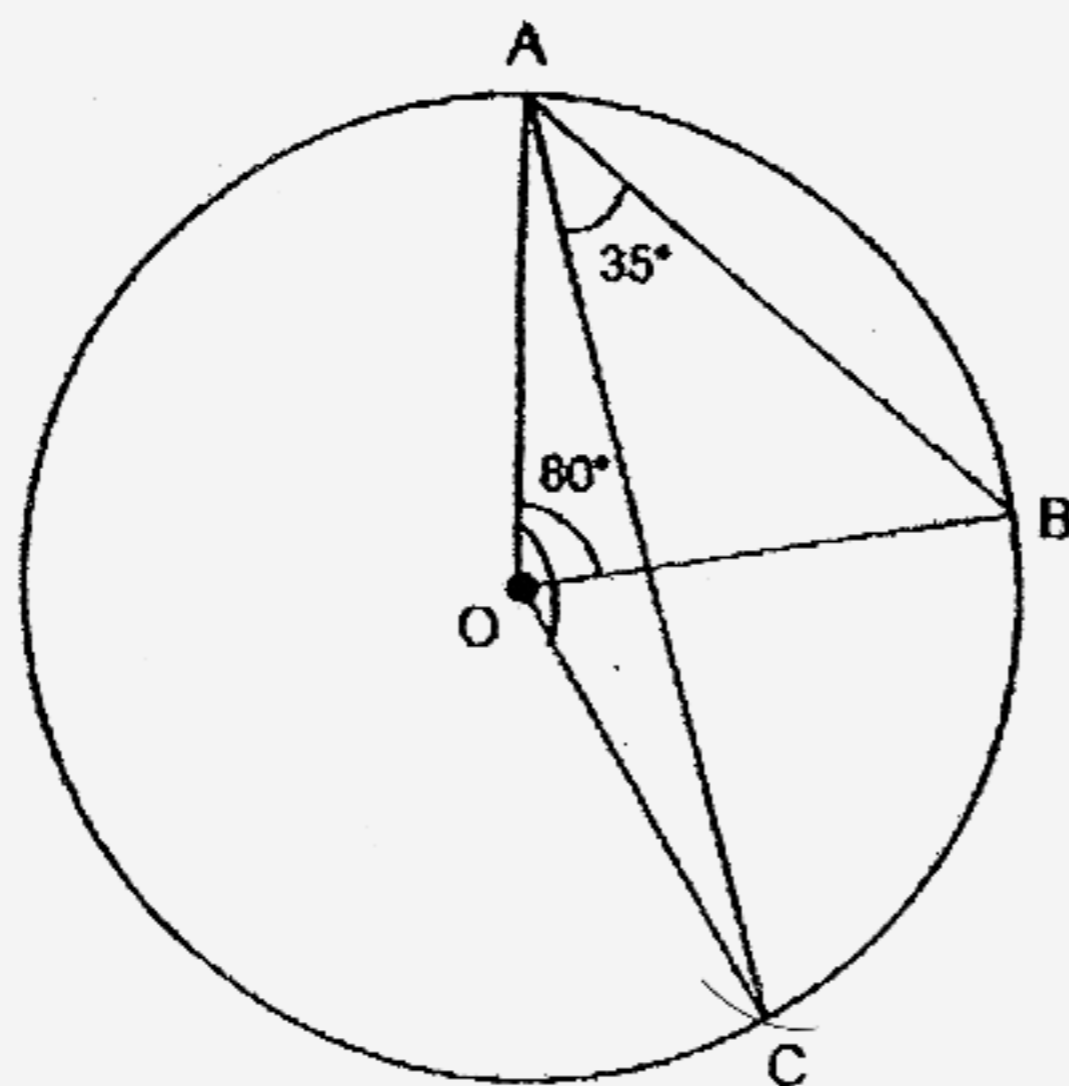
38. $\frac{2}{3}$ of Andy's amount of money is equal to $\frac{4}{7}$ of Celine's amount of money.
If Andy has \$24v, how much money does Celine have?

Ans: _____ [3]

39. Janice drew the largest possible semi-circle on a piece of cardboard measuring 60cm by 40 cm.
Then she cut out the semi-circle.
What was the perimeter of the remaining piece of cardboard?
(Take $\pi = 3.14$)

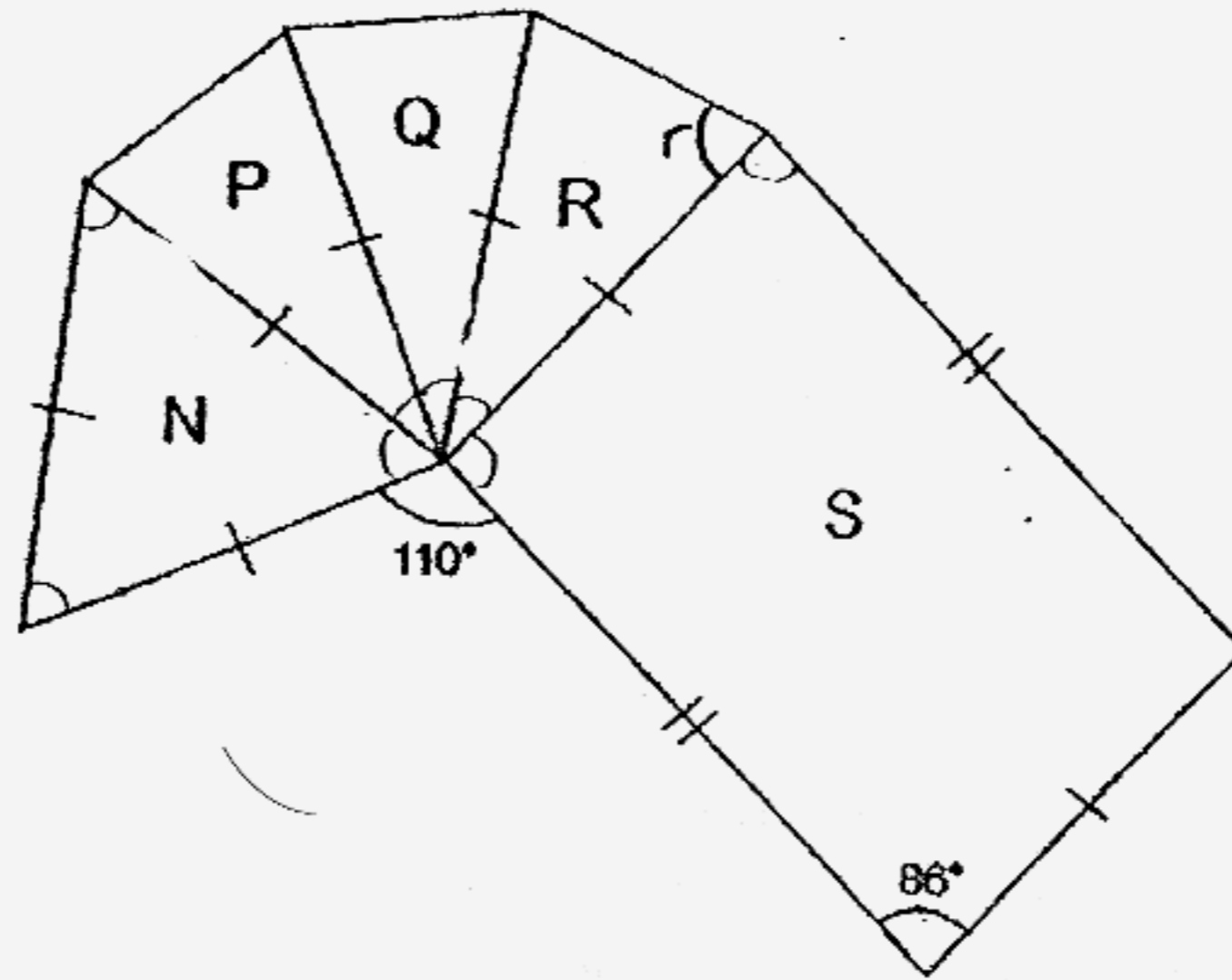
Ans: _____ [3]

40. In the figure, not drawn to scale, O is the centre of the circle.
Given that $\angle AOB = 80^\circ$ and $\angle BAC = 35^\circ$, find $\angle AOC$.



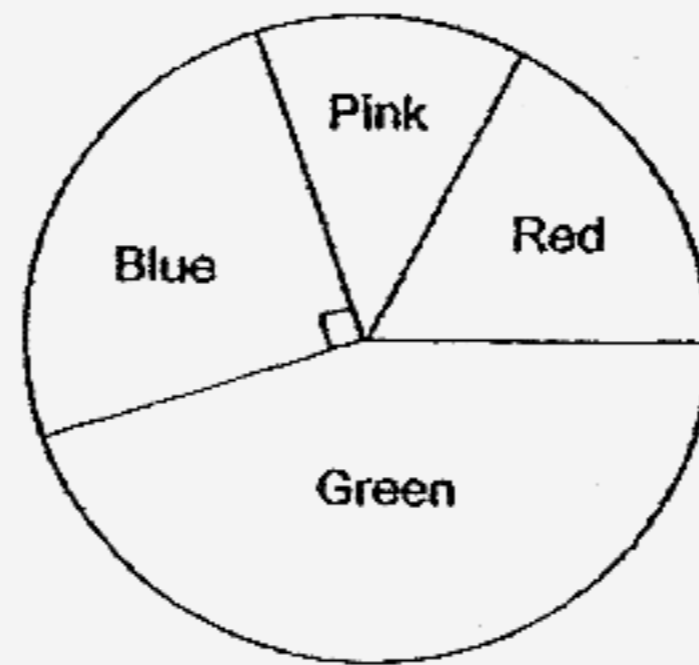
Ans: _____ [3]

41. The diagram shows 3 identical isosceles triangles, P, Q and R, an equilateral triangle, N, and a parallelogram S. What is the value of $\angle r$?



Ans: _____ [4]

42. The pie chart shows the favourite colours of the pupils of a certain class. The percentage of pupils who like red is 5% less than the percentage of pupils who like blue. The percentage of pupils who like green is 20% more than those who like red.



- What fraction of the pupils like red?
- Express, in the simplest form, the number of pupils who like green as a ratio of the number of pupils who like red.
- If 16 pupils like green, how many pupils like pink?

Ans: a) _____ [1]

b) _____ [1] 2:1

c) _____ [2]

43. There were 1 200 pupils at the funfair.
When $\frac{5}{8}$ of the boys and $\frac{7}{10}$ of the girls left, the total number of boys and girls who remained was 420.
How many boys were at the funfair at first?

Ans: _____ [4]

44. At 3 p.m. Celine left Melrose Town and travelled towards Wonder Town at an average speed of 72 km/h.

^{4.30 p.m.} At the same time, ^{who was travelling} Amelia left Wonder Town and travelled towards Melrose Town. _{Celine passed Amelia}

~~They passed each other at 4.30 p.m.~~

Half an hour later, they were 64 km apart.

(a) What was the distance between Melrose Town and Wonder Town if Celine reached Wonder Town at 6 p.m.?

(b) What was Amelia's average speed?

Ans: (a) _____ [1]

(b) _____ [3]

45. 260 *M & M* chocolate beans were divided into 3 groups, according to their colours.

The number of chocolate beans in each group was less than 150.

The number of red chocolate beans was twice the number of green chocolate beans.

There were fewer yellow chocolate beans than green chocolate beans.

The number of chocolate beans in each group was a multiple of 2 and 5.

How many yellow chocolate beans were there?

Ans: _____ [4]

46. A rectangular glass container, 80 cm long and 50 cm wide, was filled with rose syrup to a depth of 30 cm. Joan added in three rectangular blocks of ice, each measuring 20cm by 15 cm by 10 cm, into the syrup. She waited for all the ice to melt and then poured an equal amount of the syrup mixture into 2 identical plastic containers, A and B.
- a) What is the volume of syrup mixture in Container A?
(Leave your answer in ml)
- b) The syrup leaked out of Container A, through a crack, at a rate of 9 ml/min.
How many minutes later would the volume of syrup mixture in Container A decrease to 64 320 ml?

Ans: a) _____ [3]

b) _____ [2]

47. Each month Daniel saved 20% of his pocket money.
In July his mother increased his pocket money by 25%.
His pocket money from July to December remained the same.
His total savings from July to December was \$180.

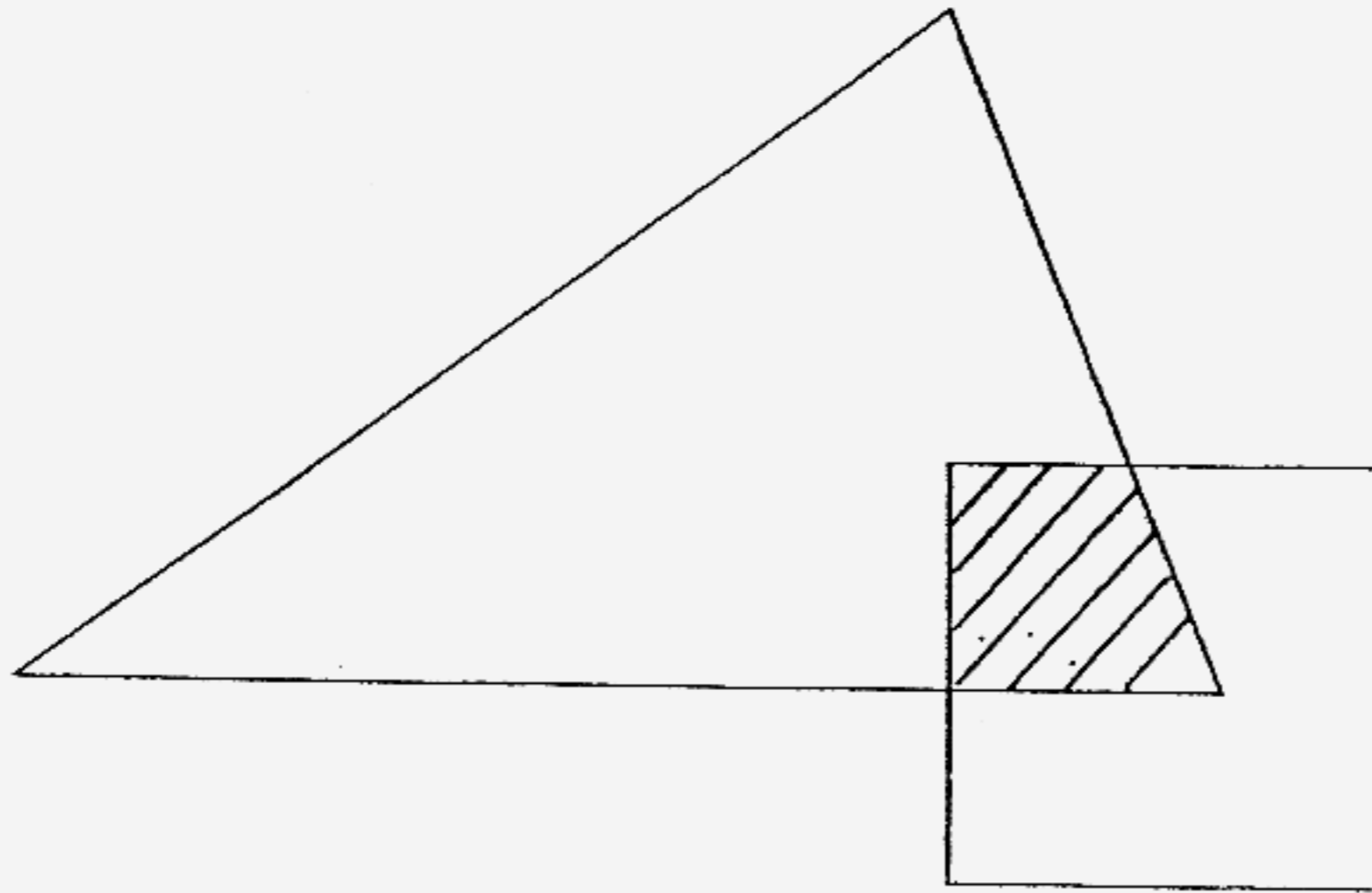
(a) What was his pocket money in July?

(b) What was his total expenditure for the whole year?

Ans: (a) _____ [2]

(b) _____ [3]

48. The figure below is made up a triangle and a square.
The triangle overlaps the square.
The ratio of the area of the triangle to the area of the square is 5 : 2.
The ratio of the unshaded part of the triangle to the unshaded part of the square is 3 : 1.
Find the area of the shaded part if the length of the square is 8 cm.



Ans: _____ [5]

- 1) 3
- 2) 1
- 3) 4
- 4) 4
- 5) 3
- 6) 3
- 7) 2
- 8) 3
- 9) 1
- 10) 4
- 11) 3
- 12) 4
- 13) 3
- 14) 1
- 15) 2
- 16) 8.29
- 17) 6
- 18) $\frac{1}{8}$
- 19) 12 mugs
- 20) 6.3
- 21) 78 pencils
- 22) 64.65
- 23) 3 mangoes
- 24) 9
- 25)
- 26) 14 and 15
- 27) 84 5-cm cubes
- 28) 22 cubes
- 29) 31.80
- 30) 119 cm^2
- 31) 92
- 32) 650
- 33) 7 word problems
- 34) 78 marks
- 35) 5 : 17
- 36) \$ 12.60
- 37) 20 kg
- 38) \$ 28v
- 39) 234.2 cm
- 40) 150°
- 41) 74°
- 42) a) $\frac{1}{5}$ b) 2 : 1 c) 6 pupils
- 43) 800 boys
- 44) a) 216 km b) 56 km/h
- 45) 50 yellow chocolate beans
- 46) a) 64500 ml b) 20 minutes
- 47) a) \$ 150 b) \$ 1296
- 48) 16 cm^2

