



**MATHEMATICS**

**03**

**Paper 1**

**October 2021**

**Marks: 60**

**TIME: 90 Minutes**

**INSTRUCTIONS**

1. Answer all questions on the answer sheet provided.
2. When you are told to begin, work as fast and as accurately as you can. If you cannot answer a question, do not spend too much time on it; go to the next question and come back to it later.
3. You may do rough work on the test paper or on a sheet of blank paper. **DO NOT** use the answer sheet for rough work.
4. Four possible answers are given for each question. Select the answer you think is the best and fill the oval for that answer on your answer sheet.
5. **Be sure to fill the ovals like this:** Erase completely answers that you wish to change. **DO NOT** make any stray marks on your answer sheet. If more than one oval is filled for a question it will be marked wrong. Be sure the oval you fill on your answer sheet is for the question you are working on in the test paper. **DO NOT mark the ovals like this:** If you do, your answers will be marked wrong.
6. Sample questions are given to help you. Read them carefully before doing the questions.

**YES**

17 (A) (B)  (C) (D)  
 18 (A) (B) (C)  (D)  
 19  (A) (B) (C) (D)

**NO**

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

**SAMPLE QUESTIONS**

1. Work out 
$$\begin{array}{r} 1.1 \\ + 0.4 \\ \hline \end{array}$$

A 1.5  
B 1.3  
C 0.7  
D 0.6

SAMPLE 1

(A) (B) (C) (D)

2. Work out 
$$\begin{array}{r} 3.5 \\ - 0.9 \\ \hline \end{array}$$

A 4.4  
B 4.6  
C 2.8  
D 2.6

SAMPLE 2

(A) (B) (C)  (D)

*This question paper contains 18 printed pages.*

1. Which digit represents thousands in the number 2315?  
A 1  
B 2  
C 3  
D 5
2. What number does the Roman numeral IV represent?  
A 11  
B 9  
C 6  
D 4
3. What is 436 761 when rounded off to the nearest ten thousand?  
A 436 000  
B 437 000  
C 430 000  
D 440 000
4. What is the value of  $7\,647 + 489 + 1\,817$ ?  
A 9 953  
B 9 943  
C 9 853  
D 8 953
5. Which of the numbers 50, 43, 36 and 28 is an odd number?  
A 28  
B 36  
C 43  
D 50
6. Which of the following statements is the same as  $7 + (3 + 8)$ ?  
A  $(7 \times 3) + (7 \times 8)$   
B  $(7 + 3) + (7 + 8)$   
C  $(7 + 3) + 8$   
D  $(7 \times 3) + 8$
7. What is  $100\text{ cm}^3$  when expressed in millilitres (ml)?  
A 100 ml  
B 1000 ml  
C 10 000 ml  
D 100 000 ml

The time table below shows the departure times for four buses from a town on a particular day.

Use it to answer question 8.

Bus	Departure time
Door Transport	12 00
Kgaka Transport	12 30
Tops Transport	13 00
Kubu Transport	13 30

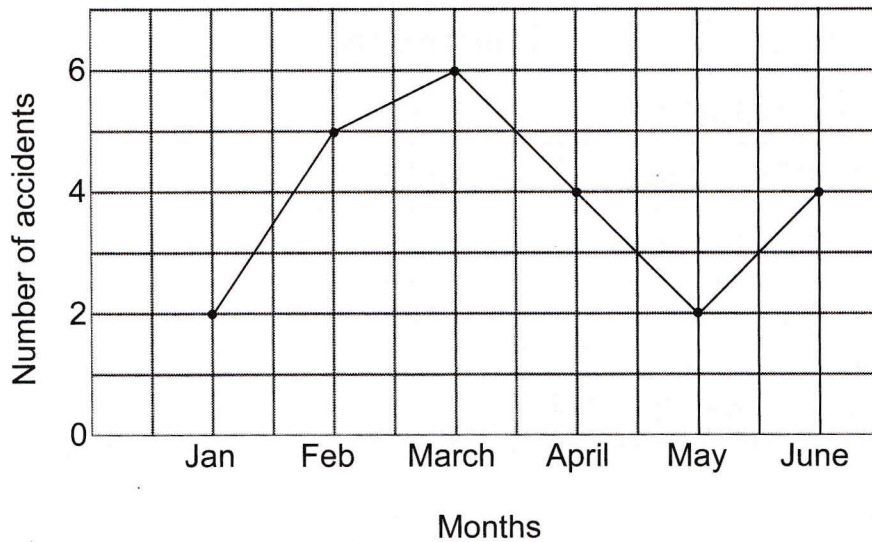
8. Samson arrives at the bus station at 12 45.  
Which is the earliest bus that he can use from town?
- A Kubu Transport
  - B Kgaka Transport
  - C Door Transport
  - D Tops Transport
9. How many centuries were there between the years 1530 and 1830?
- A 3
  - B 10
  - C 30
  - D 100

Use the numbers below to answer questions 10 and 11.

5	3	2	11	7	3	4
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10. What is the mode of the numbers?
- A 9
  - B 5
  - C 4
  - D 3
11. What is the median of the numbers?
- A 4
  - B 5
  - C 9
  - D 11

The graph below shows the number of car accidents that were recorded in a certain village from January to June. Use it to answer questions 12 and 13.



12. How many accidents were recorded in April in that village?
- A 6
  - B 5
  - C 4
  - D 2
13. Which month recorded the highest number of accidents?
- A May
  - B June
  - C March
  - D January
14. A sequence of numbers is given as 25, 22, 19, 16...  
What is the next number in the sequence?
- A 10
  - B 11
  - C 12
  - D 13
15. Arrange the numbers 0.8, 0.05, 0.85 and 0.58 in order of size, starting with the largest.
- A 0.8, 0.85, 0.05, 0.58
  - B 0.85, 0.8, 0.58, 0.05
  - C 0.05, 0.58, 0.8, 0.85
  - D 0.58, 0.05, 0.8, 0.85

16. Work out  $(9 + 2) \times 16 - 10$ .

- A 31
- B 66
- C 136
- D 166

17. Tefo and Thato share P22.00 in the ratio 7:4.  
How much will Tefo get?

- A P8
- B P9
- C P10
- D P14

18. Which of the following statements is **not** true?

- A  $0.4 = \frac{2}{5}$
- B  $0.2 < \frac{4}{5}$
- C  $0.25 > \frac{3}{8}$
- D  $0.6 > \frac{1}{2}$

19. What is the highest common factor of 42 and 56?

- A 7
- B 14
- C 21
- D 28

20. Mpho bought a bicycle for P750.00  
She sold it at a profit of 15%.  
At how much was the bicycle sold?

- A P862.50
- B P862.20
- C P852.50
- D P852.20

21. What is 60% when it is expressed as a fraction?

A  $\frac{3}{5}$

B  $\frac{3}{10}$

C  $\frac{3}{50}$

D  $\frac{3}{100}$

22. What is  $\frac{12}{5}$  when it is expressed as a decimal?

A 2.04

B 2.02

C 2.2

D 2.4

23. What is the value of  $81.126 - 29.65$ ?

A 51.476

B 51.576

C 52.476

D 61.476

24. Michael paid a full bus fare of P105.00 and his daughter paid half the fare. How much money did they pay altogether?

A P210.00

B P167.50

C P157.50

D P157.10

25. Work out  $4\frac{1}{3} - 2\frac{1}{4}$ .

A  $2\frac{11}{12}$

B  $2\frac{1}{12}$

C  $1\frac{3}{4}$

D  $1\frac{1}{4}$

26. Kaone changed P500.00 to South African Rands and was given R670.00. How much did Kaone get for every P1.00?

A P1 = R1.34

B P1 = R1.30

C P1 = R1.17

D P1 = R0.75

27. Paul had a total of P350.00 in his wallet. He bought a pair of shoes at P145.50, a notebook at P20.90 and a jersey at P150.00. How much money was he left with after paying?

A P134.60

B P43.60

C P34.60

D P33.60

28. A ship is facing Southwards. It turns clockwise and faces North. What is the size of the angle that the ship had to turn?

A  $360^\circ$

B  $270^\circ$

C  $180^\circ$

D  $90^\circ$

29. What is the value of  $490 \div 8$ ?

A 61.19

B 61.20

C 61.24

D 61.25

30. Arrange the numbers  $2\frac{2}{5}$ ,  $2\frac{3}{4}$ ,  $2\frac{3}{8}$ ,  $2\frac{1}{2}$  in order of size, starting with the smallest.

A  $2\frac{2}{5}$ ,  $2\frac{3}{4}$ ,  $2\frac{3}{8}$ ,  $2\frac{1}{2}$

B  $2\frac{1}{2}$ ,  $2\frac{3}{8}$ ,  $2\frac{3}{4}$ ,  $2\frac{2}{5}$

C  $2\frac{3}{4}$ ,  $2\frac{1}{2}$ ,  $2\frac{2}{5}$ ,  $2\frac{3}{8}$

D  $2\frac{3}{8}$ ,  $2\frac{2}{5}$ ,  $2\frac{1}{2}$ ,  $2\frac{3}{4}$

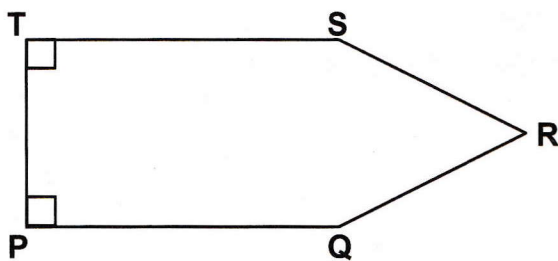
31. A mother had 150 plates.  
She gave her daughter 12% of the plates.  
How many plates did she give to her daughter?

- A 8
- B 9
- C 17
- D 18

32. What is 10 001 when it is written in words?

- A One hundred thousand and one
- B One thousand and one
- C Ten thousand and one
- D Ten hundred and one

Use the figure below to answer question 33.

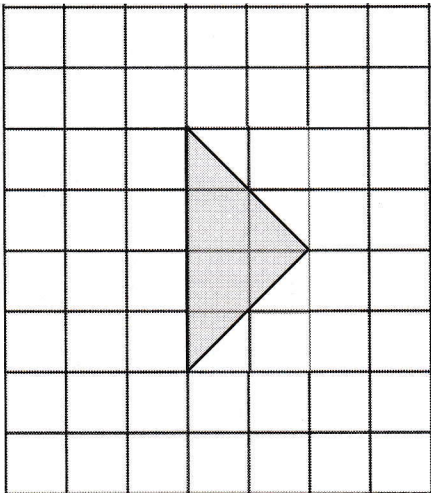


33. Which line is perpendicular to line PQ?

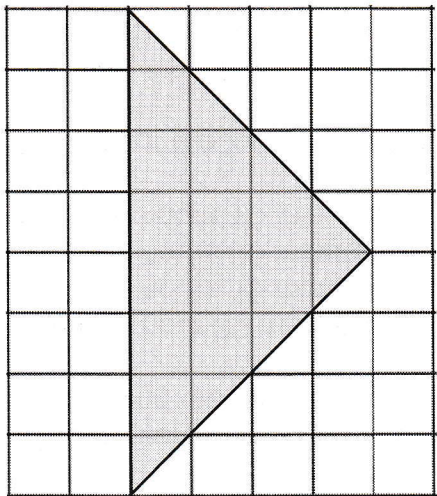
- A SR
- B PT
- C QR
- D ST

The diagram below shows a triangle on a square grid.

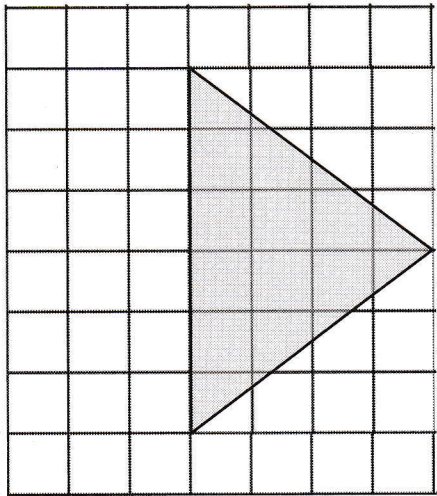
Use it to answer question 34.



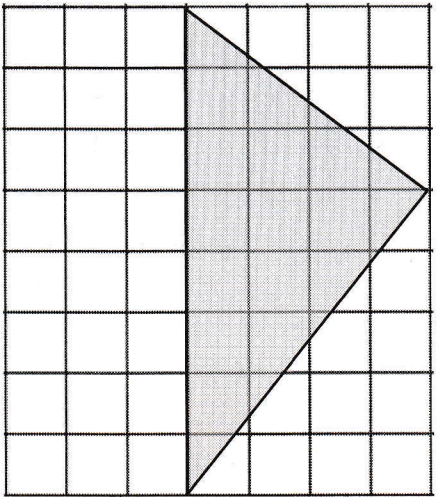
34 Which of the diagrams below is an enlargement of the triangle by a scale factor of 2?



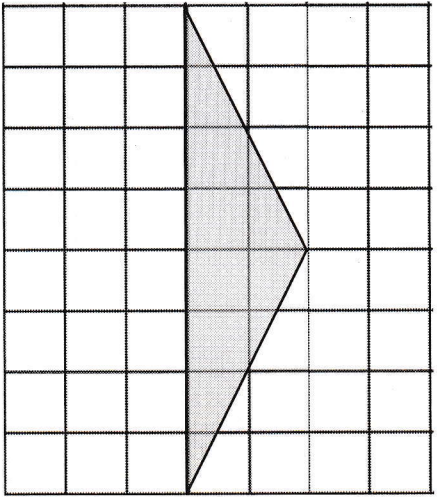
A



B



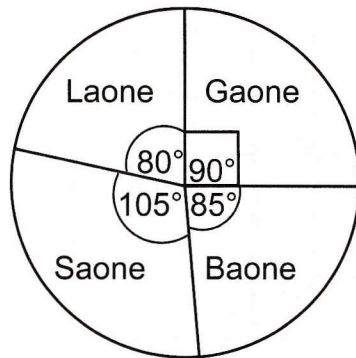
C



D

The pie chart below shows how four brothers Gaone, Baone, Saone and Laone shared a cake.

Use it to answer question 35.



35. Which of the four brothers took a factor of  $360^\circ$ ?

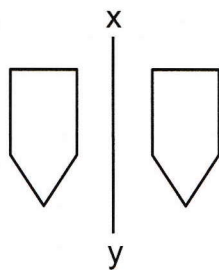
- A Baone
- B Gaone
- C Laone
- D Saone

36. A test started at 11 45 hours and ended at 14 15 hours. How long did the test last?

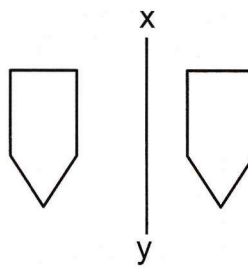
- A 1 hour 30 minutes
- B 2 hours 15 minutes
- C 2 hours 30 minutes
- D 3 hours 10 minutes

37. Which of the following diagrams show a reflection on line XY?

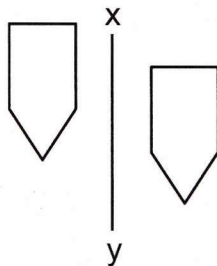
A



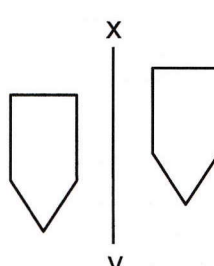
B



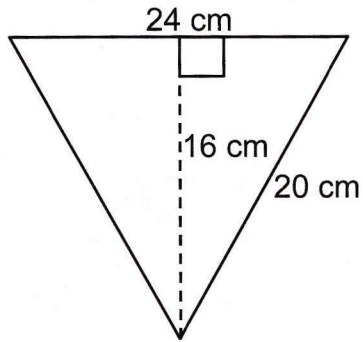
C



D



38. What is the area of the triangle below?



- A 110 cm<sup>2</sup>
- B 160 cm<sup>2</sup>
- C 192 cm<sup>2</sup>
- D 240 cm<sup>2</sup>

39. A rectangle has a width of 8 cm and a perimeter of 64 cm.  
What is the length of the rectangle?

- A 61 cm
- B 29 cm
- C 28 cm
- D 24 cm

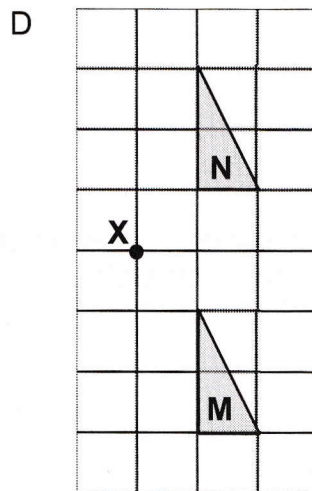
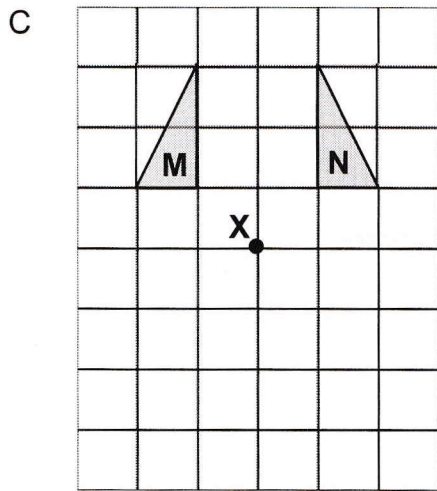
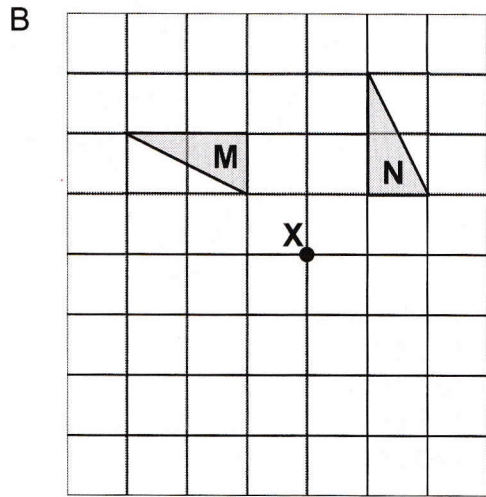
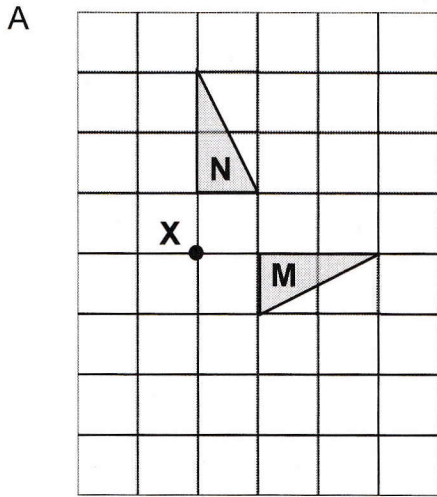
40. A box contains 48 bottles each containing 330 ml of water.  
How many ml of water is there?

- A 15 840 ml
- B 15 740 ml
- C 16 640 ml
- D 14 840 ml

41. A car travels 150 km in 2.5 hours.  
What is the average speed of the car in km/h?

- A 152.5 km/h
- B 147.5 km/h
- C 75 km/h
- D 60 km/h

42. In the diagrams below, triangle **M** is the image of triangle **N**. Which diagram shows a rotation of  $90^\circ$  clockwise about point **X**?



43. Which of the following lines is approximately 5 cm long?

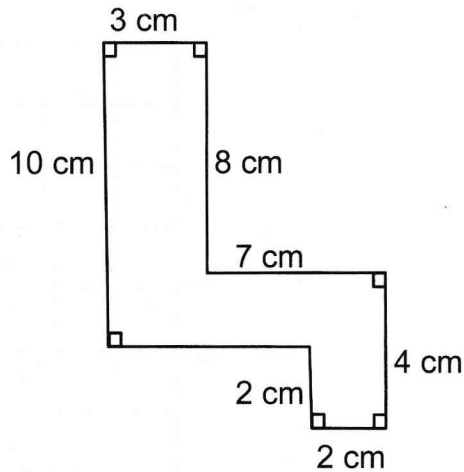
- A
- B
- C
- D

44. The 30<sup>th</sup> of April 2016 was on Saturday. On which day was the 30<sup>th</sup> of April 2019?

- A Monday
- B Tuesday
- C Friday
- D Saturday

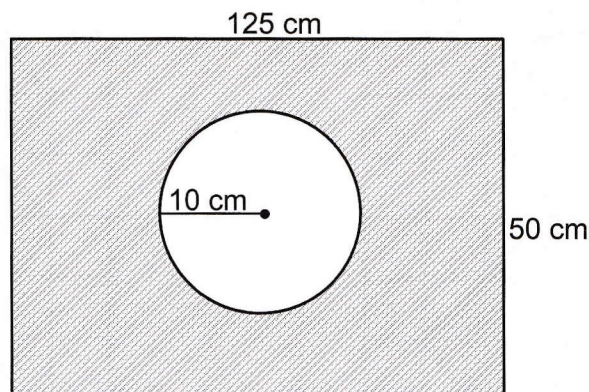


45. What is the area of the polygon shown below?



- A  $42 \text{ cm}^2$
- B  $44 \text{ cm}^2$
- C  $46 \text{ cm}^2$
- D  $48 \text{ cm}^2$

46. What is the area of the shaded region in the diagram below?  
Use  $\pi$  as 3.14.



- A  $5836 \text{ cm}^2$
- B  $5936 \text{ cm}^2$
- C  $5946 \text{ cm}^2$
- D  $6936 \text{ cm}^2$

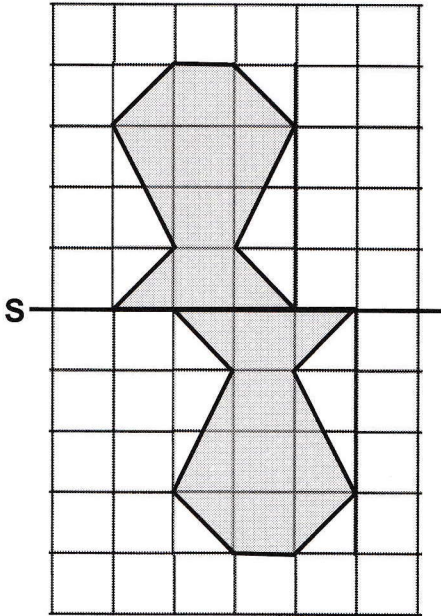
47. **Y** and **M** represent the number of sweets.  
Tom has **Y** sweets.  
He gives **M** of them to Betty.  
He remains with 20 sweets.  
Which of the following equations represents the information above?

- A  $\mathbf{Y} - \mathbf{M} = 20$
- B  $\mathbf{Y} + \mathbf{M} = 20$
- C  $\mathbf{Y} \times \mathbf{M} = 20$
- D  $\mathbf{Y} \div \mathbf{M} = 20$

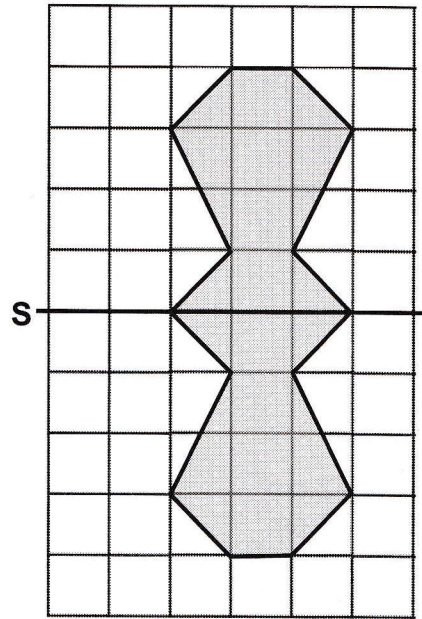


48. In which of the following diagrams below is **S** the line of symmetry?

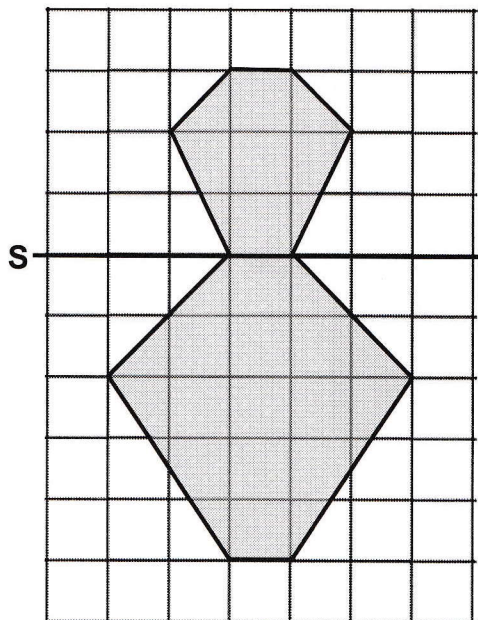
A



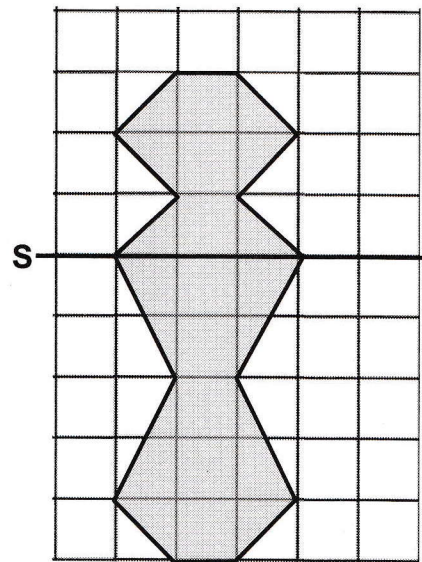
B



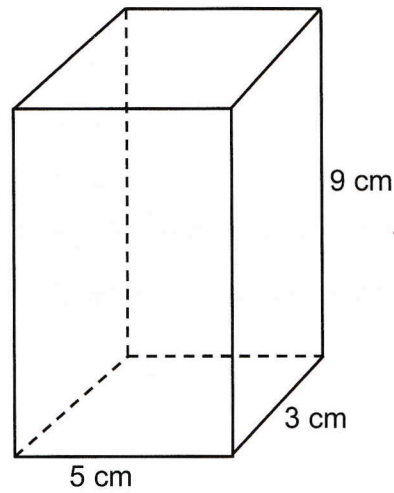
C



D



49. What is the volume of the cuboid below?



- A  $15 \text{ cm}^3$
- B  $17 \text{ cm}^3$
- C  $105 \text{ cm}^3$
- D  $135 \text{ cm}^3$

50. In the puzzle below, mathematical equations are written in a row and columns. The letter **m** represents a number and **n** represents a sign of operation. Use it to answer question 50.

	72		24	
7	=	14	<b>n</b>	2
	<b>m</b>		6	
	<b>x</b>		=	
	9		4	

What is the number **m** and the sign **n** in the puzzle?

	<b>m</b>	<b>n</b>
A	7	$\div$
B	7	$\times$
C	8	$\div$
D	8	$\times$

51. What is the value of **P** in the equation  $5P + 13 = 63$ ?

- A 13
- B 12
- C 11
- D 10

52. The probability that it rains on any day in a certain village is  $\frac{3}{10}$ .  
What is the probability that it does **not** rain in that village?

- A  $\frac{1}{10}$
- B  $\frac{1}{2}$
- C  $\frac{5}{10}$
- D  $\frac{7}{10}$

53. Work out  $\frac{15}{2} - \frac{2}{5}$ .

- A  $1\frac{3}{10}$
- B  $5\frac{1}{10}$
- C  $7\frac{1}{10}$
- D  $7\frac{3}{10}$

Use the information below to answer question 54.

Mpho counted the number of cars that visited his school from Monday to Friday. The results are shown on the table below.

Days	Monday	Tuesday	Wednesday	Thursday	Friday
No. of cars	5	7	9	2	6

54. Which graph is **most** appropriate to represent the information shown in the table?

- A Pie chart
- B Pictograph
- C Line graph
- D Bar chart

55. Estimate, to the nearest hundred, the sum of 669 and 316.

- A 400
- B 990
- C 1000
- D 1020

Study the pattern below and use it to answer question 56.

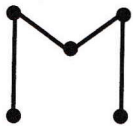


Diagram 1  
Dots 5

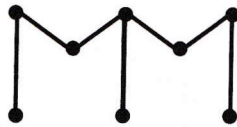


Diagram 2  
Dots 8

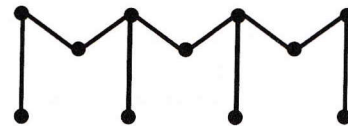
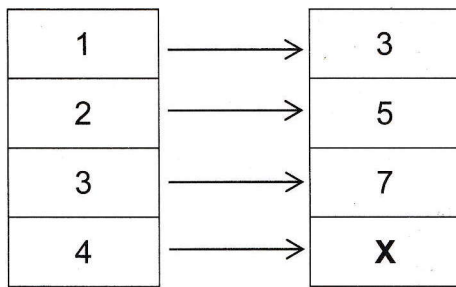


Diagram 3  
Dots 11

56. How many dots are needed for diagram 4?

- A 13
- B 14
- C 15
- D 16

57. What number is represented by the letter X in the mapping below?

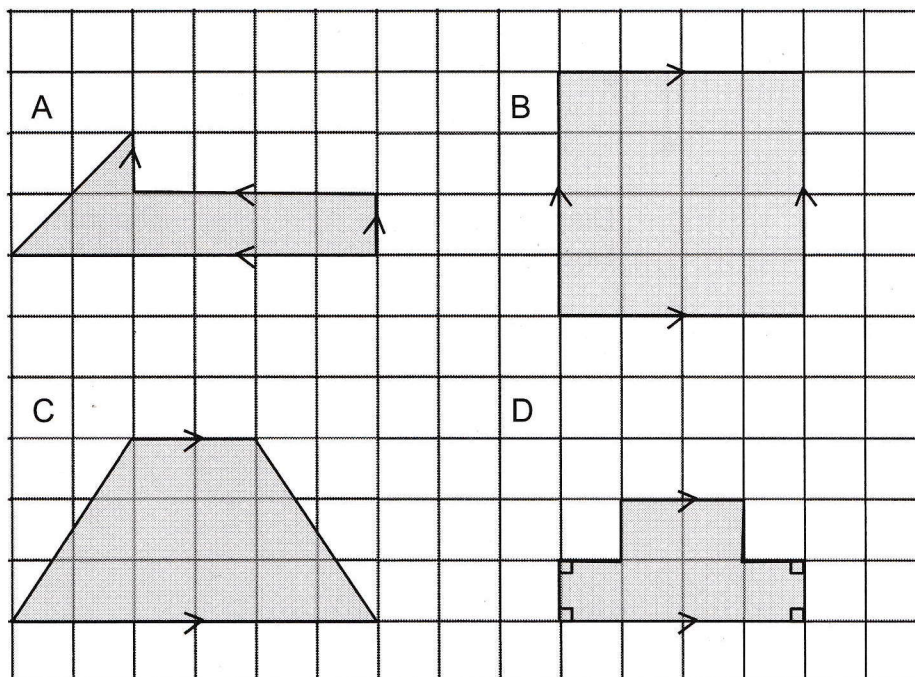


- A 8
- B 9
- C 11
- D 15

58. A sequence of numbers is given as 2, 7, 12, 17, ...  
What is the rule for getting the next number?

- A Add 5
- B Add 6
- C Multiply by 2
- D Multiply by 3 and add 1

59. Which of the following is a regular polygon?



60. What is the name of a triangle with two equal sides and two equal angles?

- A Equilateral
- B Isosceles
- C Right-angled
- D Scalene