



MATHEMATICS

03



Paper 1

October 2019

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)

1. What is the place value of 9 in the number 71 394?
- A Tens
B Units
C Hundreds
D Thousands
2. What is the number 11 when written as a Roman numeral?
- A iv
B vi
C ix
D xi
3. Arrange the numbers 0.132, 0.4, 0.31 and 0.14 in order, starting with the **smallest**.
- A 0.4, 0.31, 0.14, 0.132
B 0.4, 0.14, 0.31, 0.132
C 0.132, 0.14, 0.31, 0.4
D 0.132, 0.14, 0.4, 0.31
4. Which of the following quadrilaterals has **no** line of symmetry?
- A Parallelogram
B Rhombus
C Square
D Kite

Use the list of numbers below to answer questions 5 and 6.

4,	7,	5,	7,	9,	4,	5,	7
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5. What is the mode of the numbers?
- A 4
B 5
C 6
D 7
6. What is the median of the numbers?
- A 5
B 6
C 7
D 8

7. A bag contains 8 blue pens, 4 black pens and 3 red pens of the same shape and size. A pen is picked from the box without looking. What is the probability that the picked pen is blue?

A $\frac{1}{15}$

B $\frac{3}{15}$

C $\frac{4}{15}$

D $\frac{8}{15}$

8. Which of the following is **not** a prime number?

A 63

B 43

C 23

D 13

9. What is $\frac{75}{4}$ when expressed as a decimal?

A 18.62

B 18.65

C 18.72

D 18.75

10. A father divides P100 between his son and daughter in the ratio 2:3. How much is the son's share?

A P77

B P68

C P43

D P40

11. What is 879 425 when rounded off to the nearest hundred thousand?

A 800 000

B 870 000

C 880 000

D 900 000

The pie chart below represents the amount of time spent during different meal times. Use it to answer questions 12 and 13.



12. Which meals take the same amount of time?
- A Lunch and supper
 - B Breakfast and supper
 - C Lunch and morning tea
 - D Afternoon tea and morning tea
13. What fraction of the total time is spent on afternoon tea?
- A $\frac{43}{90}$
 - B $\frac{43}{180}$
 - C $\frac{43}{270}$
 - D $\frac{43}{360}$

14. What is 45% when expressed as a fraction in its **lowest** terms?

A $\frac{9}{20}$

B $\frac{8}{20}$

C $\frac{9}{25}$

D $\frac{8}{25}$

15. What is the value of $2\frac{3}{5} - \frac{1}{3}$?

A $1\frac{10}{15}$

B $1\frac{12}{15}$

C $2\frac{3}{15}$

D $2\frac{4}{15}$

16. What is the sum of 7 283 and 1 936?

A 8 119

B 8 219

C 9 119

D 9 219

17. What is the **highest** common factor of 32 and 48?

A 16

B 8

C 4

D 2

18. What is the value of $5\ 160 \div 5$?

A 1 010

B 1 012

C 1 030

D 1 032

19. Which of the following statements shows the associative law of addition?
- A $(5 + 9) + 15 = 5 + (9 + 15)$
 - B $5 + 9 + 15 = 15 + 9 + 5$
 - C $5(9 + 15) = 5 \times 9 + 5 \times 15$
 - D $(5 + 9) + 15 = (15 + 9) + 5$
20. What is the value of $36 \div 2 - 4 \times 3 + 5$?
- A 1
 - B 11
 - C 47
 - D 112
21. Which of the following statements is **not** correct?
- A $0.4 < \frac{3}{4}$
 - B $0.3 > \frac{3}{100}$
 - C $0.9 < \frac{9}{4}$
 - D $0.8 > \frac{7}{8}$
22. Work out the value of $7.462 - 3.657$.
- A 3.805
 - B 3.815
 - C 4.805
 - D 4.815
23. What value does x represent in the equation $3x - 1 = 11$?
- A 4
 - B 9
 - C 10
 - D 12
24. Wilson changed \$250 into Pula. He got P1 850 back. What was the exchange rate?
- A \$1 = P740.00
 - B \$1 = P74.00
 - C \$1 = P7.40
 - D \$1 = P0.74

25. Which of the numbers listed below is the smallest?

$2\frac{1}{2},$	$2\frac{5}{6},$	$2\frac{1}{4},$	$2\frac{3}{8}$
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A $2\frac{1}{2}$

B $2\frac{5}{6}$

C $2\frac{1}{4}$

D $2\frac{3}{8}$

26. A phone costs P800. A loss of P80 was made when selling the phone. What was the selling price of the phone?

- A P720
- B P820
- C P880
- D P1 600

27. Thebe has m pens and Tebogo has r pens. Thebe buys **two** more pens. Which expression represents the total number of pens they both have?

- A $m + 2m + r$
- B $m \times 2m + r$
- C $m + 2 + r$
- D $m \times 2 + r$

28. Sophie is facing East. She turns 90° clockwise. Which direction is she facing after the turn?

- A East
- B North
- C South
- D West

29. A school sent a team of 200 athletes to a competition. The team had 80 girls. What percentage of the athletes were girls?

- A 4%
- B 6%
- C 40%
- D 60%

30. What is the value of $1\ 550 \div 20$?

- A 72.1
- B 72.5
- C 77.1
- D 77.5

31. Estimate the value of $6\ 857 + 1\ 559$ to the nearest thousand.

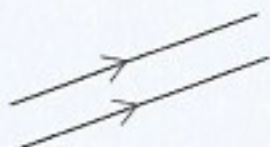
- A 9 000
- B 8 500
- C 8 400
- D 8 000

32. Which of the following lines are parallel?

A



B



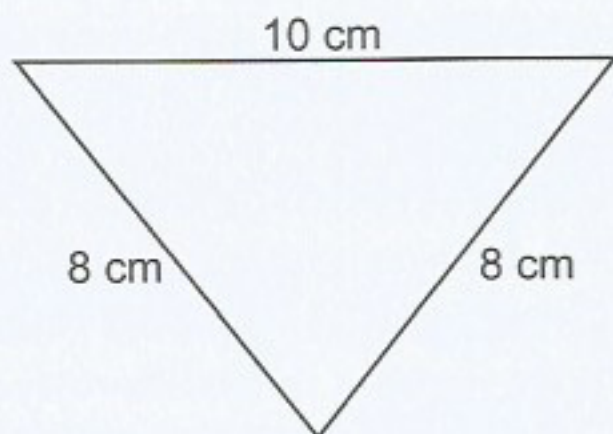
C



D



33. What type of a triangle is shown below?



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

34. Mr Bosigo bought 4 tyres at P5 460. He also bought a service kit for P3 975. How much money did Mr Bosigo spend altogether?

- A P9 435
- B P9 335
- C P8 435
- D P8 335

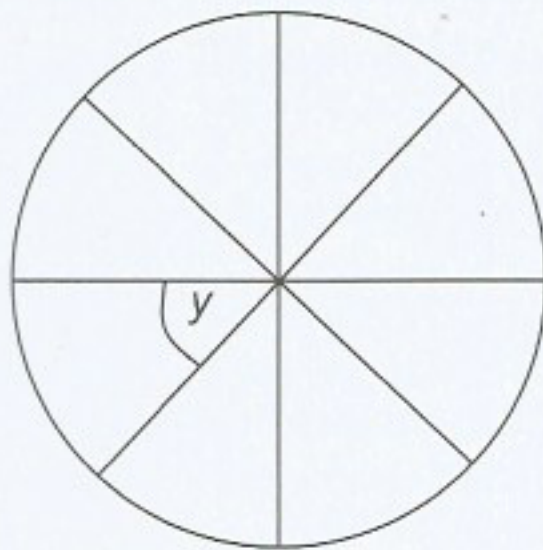
35. Kago bought a bed at P1 750 from a factory shop. Botlhe bought the same type of bed at P2 140 from a furniture shop. How much less did Kago buy the bed for?

- A P3 890
- B P1 490
- C P490
- D P390

36. A sequence is given as 3, 7, 11, 15,... What is the next number in the sequence?

- A 16
- B 18
- C 19
- D 20

37. The diagram below shows a circle divided into 8 equal parts.



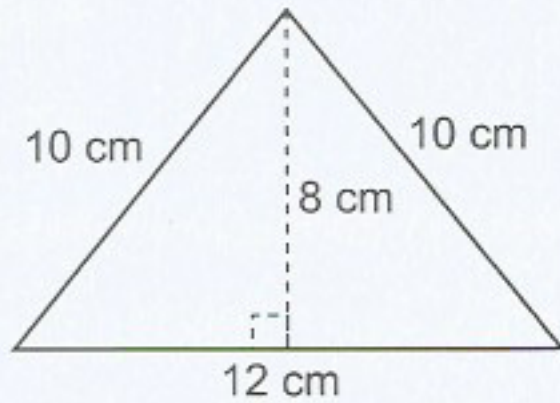
What is the size of the angle marked y ?

- A 90°
- B 60°
- C 45°
- D 30°

38. Lame left home for school at 0659. She arrived at school at 0715.
How long did she take to arrive at school?

- A 16 minutes
- B 56 minutes
- C 1 hour 16 minutes
- D 1 hour 56 minutes

39. What is the area of the triangle shown below?



- A 60 cm^2
- B 48 cm^2
- C 40 cm^2
- D 32 cm^2

40. The table below shows a lesson time table.

	7:00 - 8:00	8:00 - 9:00	9:00 - 10:00
Monday	Mathematics	Setswana	English
Tuesday	Science	Agriculture	Social Studies
Wednesday	Religious and Moral Education	Mathematics	CAPA
Thursday	English	Setswana	Mathematics
Friday	Setswana	Science	Agriculture

How much **more** time does Mathematics take than Agriculture in a week?

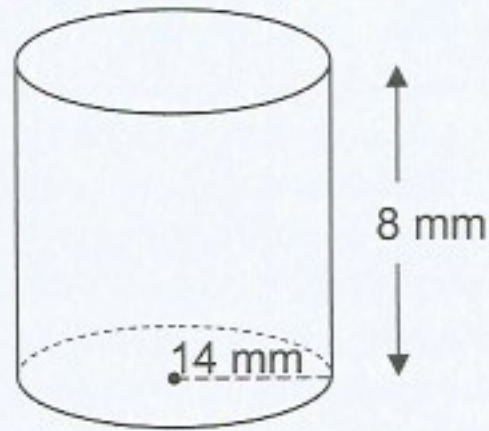
- A 1 hour
- B 2 hours
- C 3 hours
- D 5 hours

41. What is 600 cm^3 when expressed in litres?

- A 60 000 litres
- B 6 litres
- C 0.6 litres
- D 0.006 litres

42. What is the volume of the cylinder shown below?

Use $\pi = \frac{22}{7}$.



- A $4\,928 \text{ mm}^3$
- B $4\,828 \text{ mm}^3$
- C $4\,788 \text{ mm}^3$
- D $3\,328 \text{ mm}^3$

43. What is the approximate length of the line below?

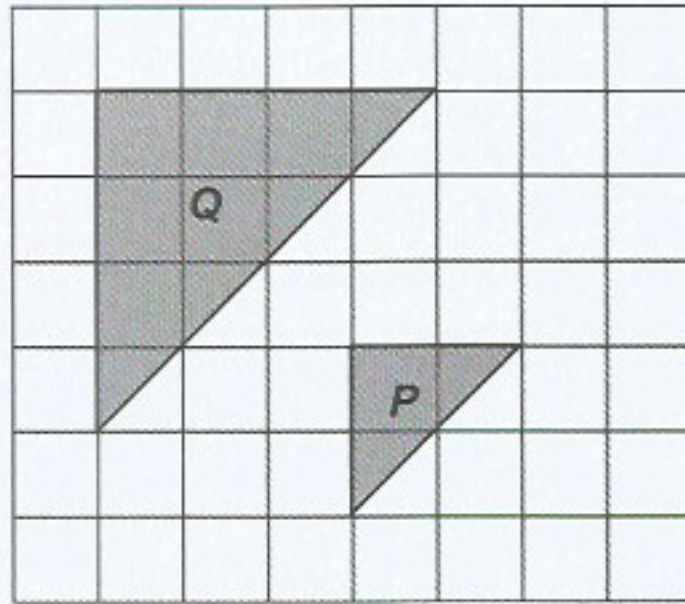


- A 45 mm
- B 45 cm
- C 45 m
- D 45 km

44. Dira's car had 37.5 litres of petrol.
He used 19.75 litres of petrol while driving to town.
How much petrol was left when he arrived in town?

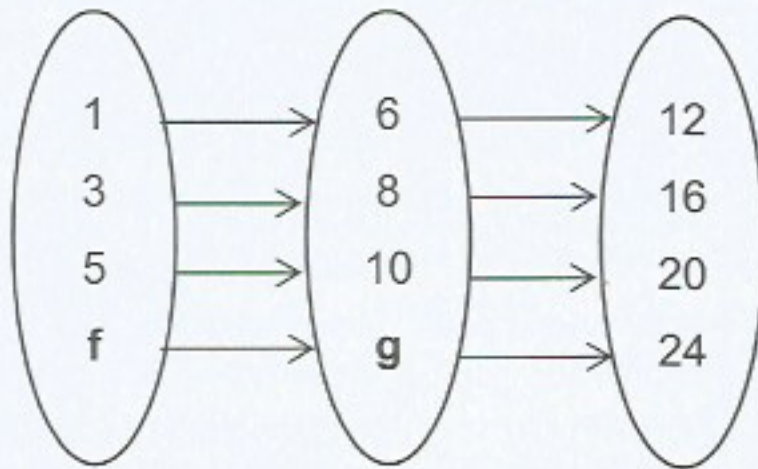
- A 16.75 litres
- B 17.25 litres
- C 17.75 litres
- D 18.25 litres

45. In the diagram below, triangle **Q** is the image of triangle **P** after an enlargement. What is the scale factor of the enlargement?



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

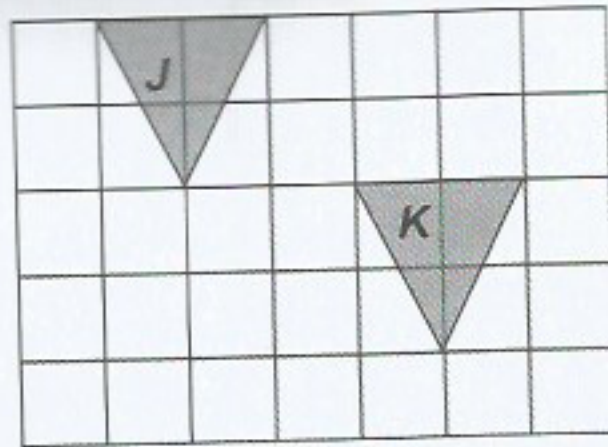
46. The diagram below shows a mapping of numbers.



Which numbers are represented by **f** and **g**?

	f	g
A	6	11
B	7	12
C	8	13
D	9	14

47. What is the description of the translation which maps triangle *J* onto triangle *K*?



- A 3 squares to the left and 2 squares upwards
 B 3 squares to the left and 3 squares upwards
 C 3 squares to the right and 2 squares downwards
 D 3 squares to the right and 3 squares downwards
48. The puzzle below shows three mathematical equations. One equation is in a row and two are in columns. The letter *m* represents a number and *n* represents a sign of operation.

	72		24	
7	=	14	n	2
	m		6	
	x		=	
	9		4	

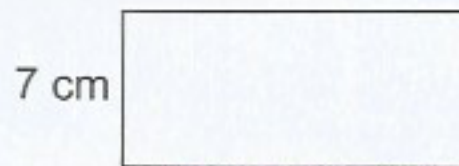
What is the number *m* and the sign *n* in the puzzle?

	<i>m</i>	<i>n</i>
A	7	÷
B	7	×
C	8	÷
D	8	×

49. Which of the following is a regular polygon?

- A Rectangle
 B Parallelogram
 C Isosceles triangle
 D Equilateral triangle

50. The diagram below shows a rectangle of width 7 cm. Its perimeter is 36 cm.

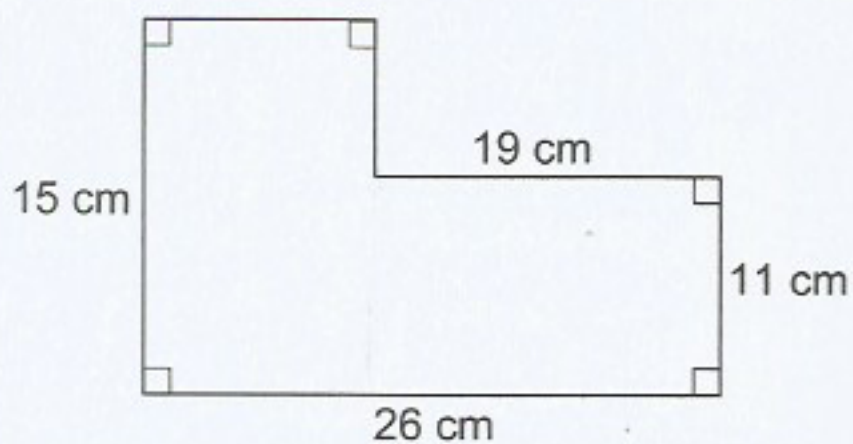


What is the length of the rectangle?

- A 9 cm
 - B 11 cm
 - C 14.5 cm
 - D 21.5 cm
51. How many centuries are there in 100 years?

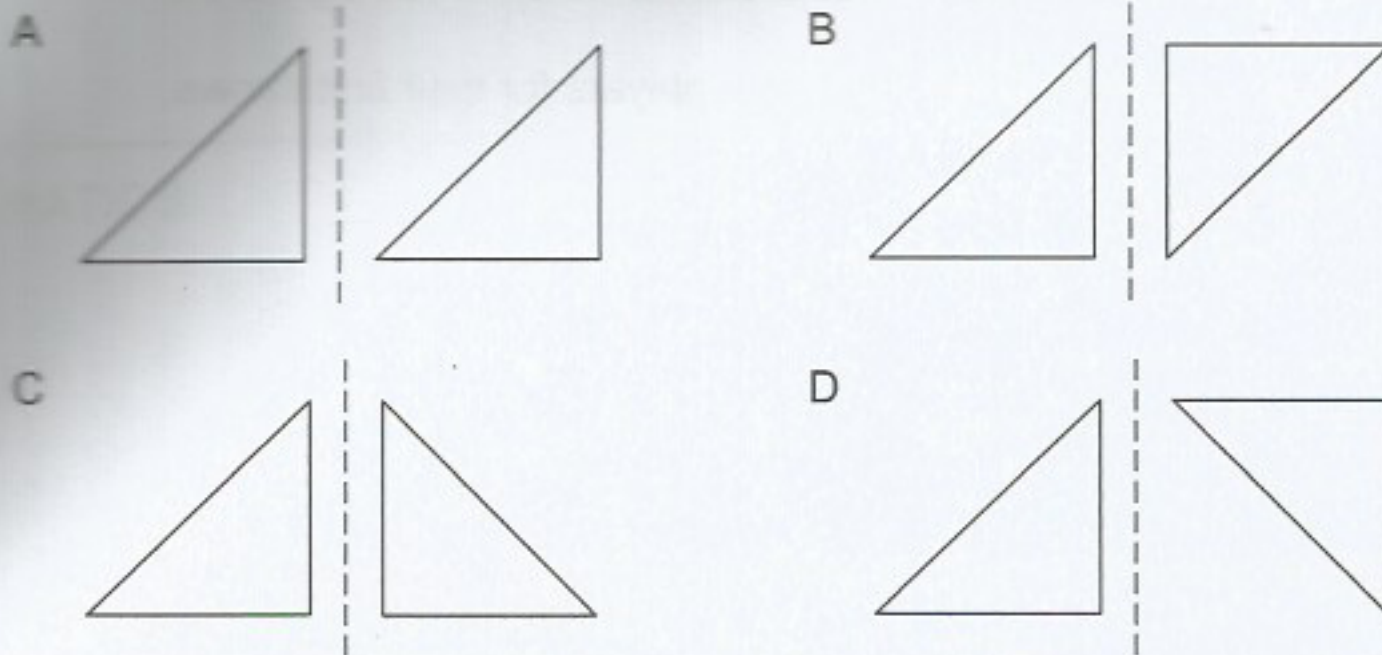
- A 1
- B 10
- C 100
- D 1000

52. What is the area of the figure below?



- A 286 cm^2
 - B 304 cm^2
 - C 314 cm^2
 - D 390 cm^2
53. A train travelled a distance of 320 km in 4 hours. What was the average speed of the train?
- A 75 km/h
 - B 80 km/h
 - C 316 km/h
 - D 324 km/h

54. Which diagram below shows a reflection?



55. A rectangular wall of area $1\,250\text{ cm}^2$ is to be tiled using square tiles. Each tile has an area of 25 cm^2 . How many tiles are needed to tile the wall?

- A 10
- B 50
- C 1 225
- D 1 275

56. The time in Botswana is 6 hours behind the time in Singapore. What is the day in Singapore when the time in Botswana is 2030 on Tuesday?

- A Monday
- B Tuesday
- C Wednesday
- D Thursday

57. Which graph is the **most** suitable for showing different shoe sizes of five boys?

- A Pictograph
- B Line graph⁷
- C Pie chart⁺
- D Bar chart

58. The mass of a car is $2\,700\text{ kg}$. When the car is loaded its mass becomes $3\,225\text{ kg}$. What is the mass of the load?

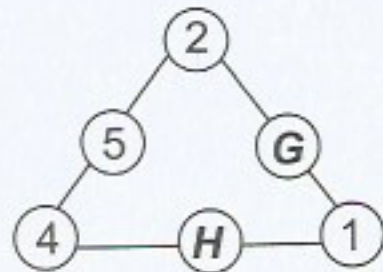
- A $5\,925\text{ kg}$
- B $1\,525\text{ kg}$
- C 625 kg
- D 525 kg

59. A game is played with a die.
The game begins when a player has a sum of 7 from throwing the die more than once.
The table below shows the results of four players for their first throws.

	First throw
Sam	6
Dan	5
Lone	4
Neo	3

Which player will begin the game when they get 4 in their second throw?

- A Sam
B Dan
C Lone
D Neo
60. The sum of numbers along each side of the triangle below is the same.



Which numbers do the letters **G** and **H** represent?

	G	H
A	8	6
B	6	8
C	10	20
D	20	10



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