

**WASSCE / WAEC 2015 May/June Core / General Mathematics Past
Questions Paper 1 (Objectives)**

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1. If $\{x: 2 \leq x \leq 18; x \in \text{integer}\}$ and $7+x = 4(\text{mod}9)$, find the highest value of x .

- A. 2
- B. 5
- C. 15
- D. 18

2. The sum of 11011_2 , 11111_2 and 10000_2 is $10m10n0_2$. Find the values of m and n .

- A. $m = 0, n = 0$
- B. $m = 1, n = 0$
- C. $m = 0, n = 1$
- D. $m = 1, n = 1$

3. A trader bought an engine for \$15,000.00 outside Nigeria. If the exchange rate is \$0.075 to N1.00, how much did the engine cost in naira?

- A. N250,000.00
- B. N200,000.00
- C. N150,000.00
- D. N100,000.00

$$\frac{27^x \times 3^{1-x}}{9^{2x}}$$

4. If $\frac{27^x \times 3^{1-x}}{9^{2x}}$ find the value of x

- A. 1
- B. $1/2$
- C. $-1/2$
- D. -1

5. Find the 7th term of the sequence: 2,5,10,17,26,...

- A. 37
- B. 48

- C. 50
- D. 63

6. Given that $\log_x 64 = 3$, evaluate $x \log_2 8$.

- A. 6
- B. 9
- C. 12
- D. 24

7. if $2^n = y$, find $2^{(2+n/3)}$

- A. $4y^{1/3}$
- B. $4y^{-3}$
- C. $2y^{1/3}$
- D. $2y^{-3}$

8. Factorize completely: $6ax - 12by - 9ay + 8bx$.

- A. $(2a - 3b)(4x + 3y)$
- B. $(3a + 4b)(2x - 3y)$
- C. $(3a - 4b)(2x - 3y)$
- D. $(2a + 3b)(4x - 3y)$

9. Find the equation whose roots are $3/4$ and -4

- A. $4x^2 - 13x + 12 = 0$
- B. $4x^2 - 13x - 12 = 0$
- C. $4x^2 + 13x - 12 = 0$
- D. $4x^2 + 13x + 12 = 0$

10. If $m=4$, $n=9$ and $r=16$, evaluate

$$\frac{m}{n} - 1\frac{7}{9} + \frac{n}{r}$$

- A. 1516
- B. $1\frac{1}{16}$ (1 whole number, 1 over 16)
- C. $5/16$

D. $-37/48$

11. Adding 42 to a given positive number gives the same result as squaring the number. find the number.

- A. 14
 B. 13
 C. 7
 D. 6

12. Ada draws the graphs of $y=x^2-x-2$ and $y=2x-1$ on the same axes. Which of these equations is she solving?

- A. $x^2-x-3=0$
 B. $x^2-3x-1=0$
 C. $x^2-3x-3=0$
 D. $x^2+3x-1=0$

13. The volume of a cone of height 3cm is $(38)^{1/2}\text{ cm}^3$. Find the radius of its base. [Take $\pi=22/7$]

- A. 3.0cm
 B. 3.5cm
 C. 4.0cm
 D. 4.5cm

14. A sector of a circle with radius 6cm subtends an angle of 60° at the centre. Calculate its perimeter in terms of π .

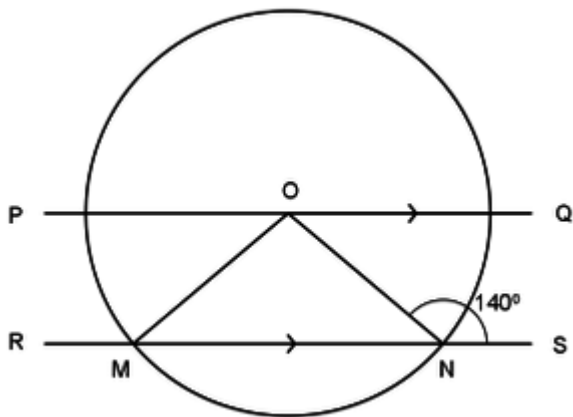
- A. $2(\pi+6)\text{cm}$
 B. $2(\pi+3)\text{cm}$
 C. $2(\pi+2)\text{cm}$
 D. $2(\pi+12)\text{cm}$

15. The dimensions of a rectangular tank are 2m by 7m by 11m . If its volume is equal to that of a cylindrical tank of height 4cm , calculate the base radius of the cylindrical tank.

[Take $\pi=22/7$]

- A. 14m
 B. 7m
 C. $(3)^{1/2}$

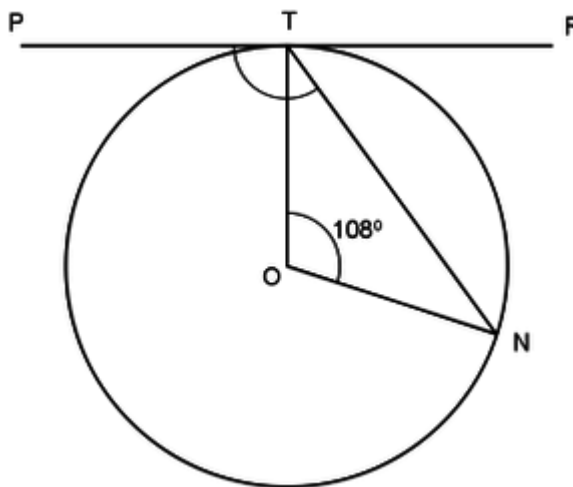
- D. $(1)^{3/4}$



16.

In the diagram, O is the centre of the circle. If $PQ \parallel RS$ and $\angle ONS = 140^\circ$, find the size of angle POM.

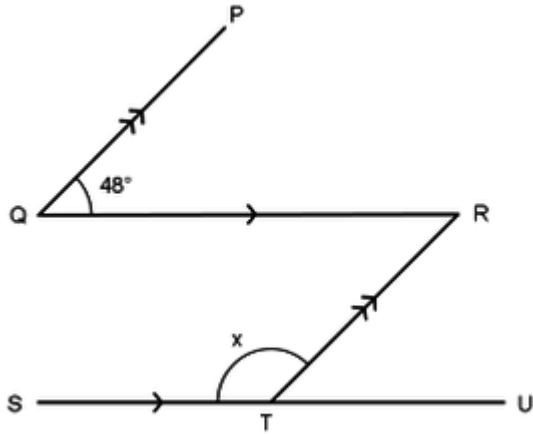
- A. 40°
- B. 50°
- C. 60°
- D. 80°



17.

In the diagram above, PTR is a tangent to the circle with center O. If $\angle TON = 108^\circ$, calculate the size of angle $\angle PTN$.

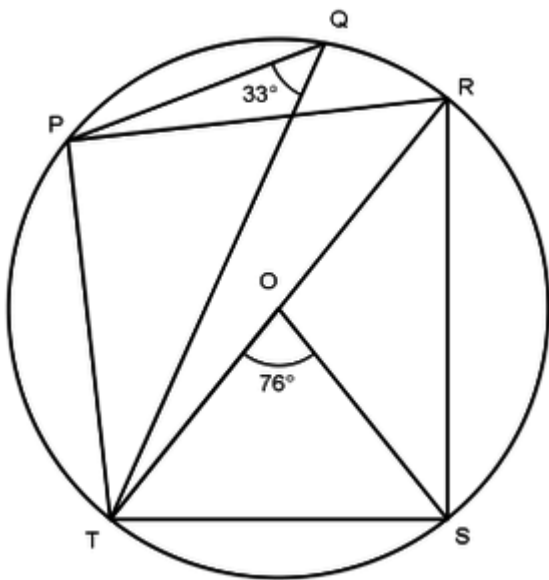
- A. 132°
- B. 126°
- C. 108°
- D. 102°



18.

In the diagram $PQ \parallel RT$, $QR \parallel SU$, $\angle PQR=48$ and $\angle RTS=x$. Find the value of x .

- A. 134°
- B. 132°
- C. 96°
- D. 48°



In the daigram, O is the center of the circle, RT is a diameter, $\angle PQT=33^\circ$ and $\angle TOS=76^\circ$.

Use this diagram to answer questions 19 and 20.

19. Calculate the value of $\angle PTR$.

- A. 73°
- B. 67°
- C. 57°
- D. 37°

20. Find the size of angle $\angle PRS$.

- A. 76°
- B. 71°
- C. 38°
- D. 33°

x	0	$1\frac{1}{4}$	2	4
y	3	$5\frac{1}{2}$		

The table shows some values for a linear graph.

Use it to answer questions 21 and 22.

21. Find the gradient of the line.

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

22. What is the value of y when $x=2$?

- A. 5
- B. 7
- C. 9
- D. 11

23. Given that $\tan x = \frac{2}{3}$, where $0 \leq x \leq 90$, find the value of $2\sin x$.

- A. $\frac{2\sqrt{13}}{\sqrt{13}}$
- B. $\frac{3\sqrt{13}}{\sqrt{13}}$
- C. $\frac{4\sqrt{13}}{\sqrt{13}}$
- D. $\frac{6\sqrt{13}}{13}$

24. $PQRS$ is a square. If X is the midpoint of PQ , calculate, correct to the nearest degree, angle PXS .

- A. 53°
- B. 55°

- C. 63°
- D. 65°

25. The angle of elevation of an aircraft from a point K on the horizontal ground is 30° . If the aircraft is $800m$ above the ground, how far is it from K ?

- A. $400m$
- B. $692.82m$
- C. $923.76m$
- D. $1,600.00m$

26. The population of students in a school is 810 . If this is represented on a pie chart, calculate the sector angle for a class of 72 students.

- A. 32°
- B. 45°
- C. 60°
- D. 75°

27. The scores of twenty students in a test are as follows:

$44,47,48,49,50,51,52,53,53,54,58,59,60,61,63,65,67,70,73,75$.

Find the third quartile.

- A. 62
- B. 63
- C. 64
- D. 65

Scores	0 - 4	5 - 9	10 - 14
Frequency	2	1	2

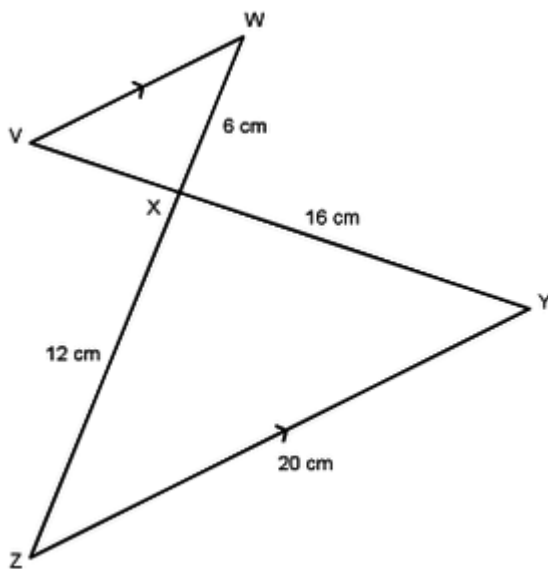
28. The table shows the distribution of the scores of some students in a test. Calculate the mean score.

- A. 5.6
- B. 6.2
- C. 6.6
- D. 7.0

29. The probabilities that Kebba, Ebou and Omar will hit a target are $\frac{2}{3}$, $\frac{3}{4}$ and $\frac{4}{5}$ respectively. Find the probability that only Kebba will hit the target.

- A. $\frac{7}{5}$
- B. $\frac{7}{60}$
- C. $\frac{1}{30}$
- D. $\frac{1}{60}$

30. In the diagram, $VW \parallel YZ$, $|WX|=6\text{cm}$, $|XY|=16\text{cm}$, $|YZ|=20\text{cm}$ and $|ZX|=12\text{cm}$. Calculate $|VX|$.



- A. 3 cm
- B. 4 cm
- C. 6 cm
- D. 8 cm