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

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 7^{th} 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. 4*y*^*1/3*

B. 4*y*^-*3*

C. 2y^1/3

D. 2*y*^-*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 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 $(38)^{\wedge}1/2\ cm^3$. 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. $2(\pi+6)cm$

B. $2(\pi+3)cm$

C. $2(\pi+2)cm$

D. $2(\pi+12)cm$

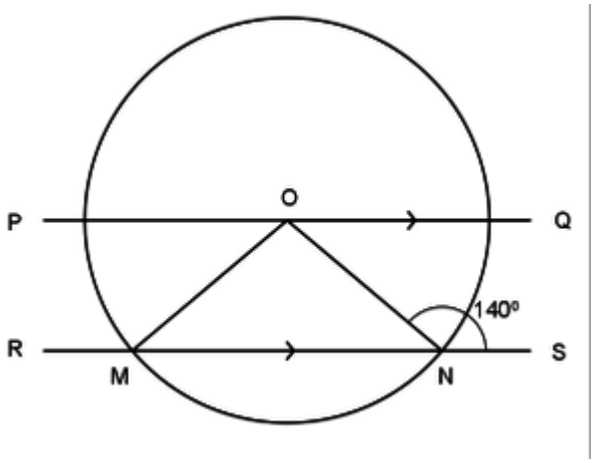
15. The dimensions of a rectangular tank are $2m$ by $7m$ by $11m$. If its volume is equal to that of a cylindrical tank of height $4cm$, calculate the base radius of the cylindrical tank. [Take $\pi=22/7$]

A. $14m$

B. $7m$

C. $(3)^{\wedge}1/2$

D. (1)^3/4



16.

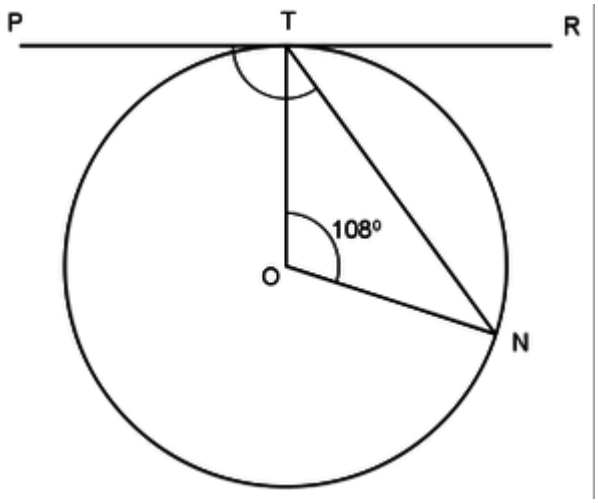
In the diagram, O is the centre of the circle. If PQ||RS and angle ONS = 140°, find the size of angle POM.

A. 40°

B. 50°

C. 60°

D. 80°



17.

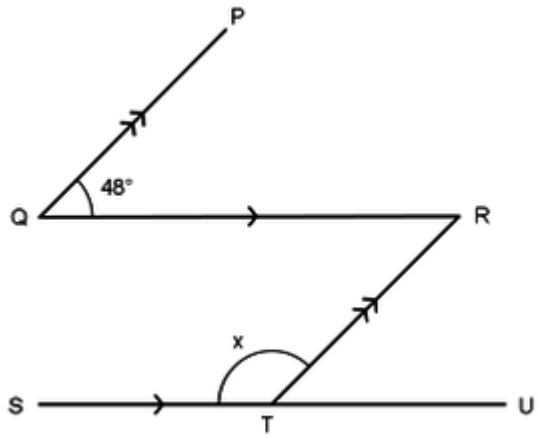
In the diagram above, PTR is a tangent to the circle with center O. If angle $\angle TON = 108^\circ$, calculate the size of angle $\angle PTN$.

A. 132°

B. 126°

C. 108°

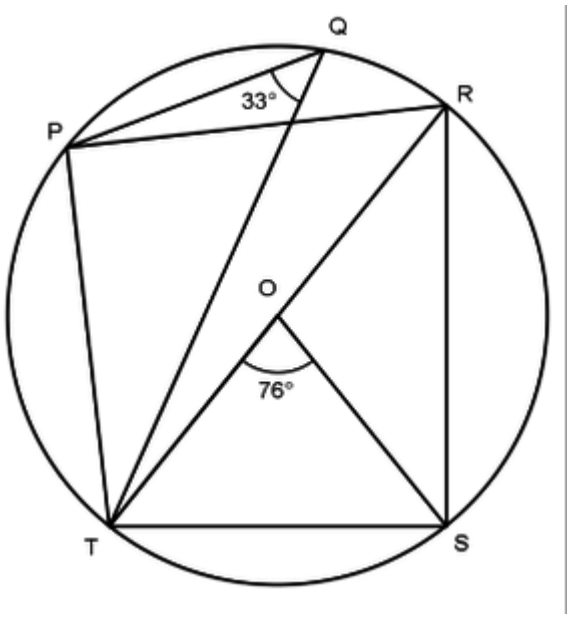
D. 102°



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 1/4	2	4
y	3	5 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 $\tan x=2/3$, where $0\leq x\leq 90$, find the value of $2\sin x$.

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

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 $2/3$, $3/4$ and $4/5$ respectively. Find the probability that only Kebba will hit the target.

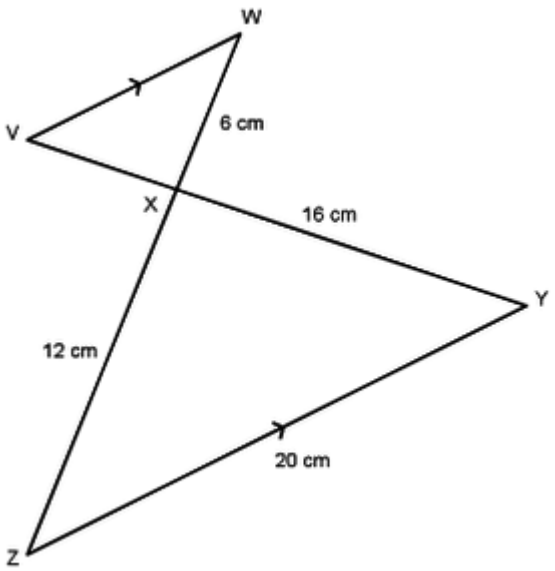
A. $7/5$

B. $7/60$

C. $1/30$

D. $1/60$

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



A. 3 cm

B. 4 cm

C. 6 cm

D. 8 cm
