

2019 WASSCE Core Mathematics 1
(Core Maths) Past Questions – Paper One

1. Express, correct to three significant figures, 0.003597.

- A. 0.00359
- B. 0.00360
- C. 0.004
- D. 0.359

2. Evaluate

- A. $-\frac{5}{2}$
- B. $-\frac{2}{5}$
- C. $\frac{2}{5}$
- D. $\frac{5}{2}$

3. Solve $\frac{y+1}{2} - \frac{2y-1}{3} = 4$.

- A. $y = 29$
- B. $y = -29$
- C. $y = -19$
- D. $y = 19$

4. Simplify, correct to three significant figures $(27.63)^2 - (12.37)^2$

- A. 610
- B. 611
- C. 612
- D. 614

5. If $7+y \equiv 4 \pmod{8}$, find the least value of y , $10 \leq y \leq 30$

- A. 21
- B. 19
- C. 13
- D. 11

6. If $T = \{\text{prime numbers}\}$ and $M = \{\text{odd numbers}\}$ are subsets of $U: x : 0 < x \leq 10$

Find $T' \cap M'$

- A. $\{1, 2, 3, 5, 7, 8, 9\}$
- B. $\{1, 2, 4, 6, 8, 10\}$

- C. {1, 4, 6, 8, 10}
- D. {4, 6, 8, 10}

7. Evaluate $\frac{\log_3 - \log_2 8}{\log_3 9}$.

- A. $-\frac{1}{2}$
- B. $\frac{1}{3}$
- C. $\frac{1}{2}$
- D. $-\frac{1}{3}$

8. Evaluate $23_y = 1111_{two}$

- A. 7
- B. 6
- C. 5
- D. 4

9. 9. If 6, p and 14 are consecutive terms in Arithmetic Progression (A.P), find the value Of p.

- A. 8
- B. 6
- C. 10
- D. 9

10. Evaluate $2\sqrt{28} - 3\sqrt{50} + \sqrt{72}$

A. $4\sqrt{7} + \sqrt{2}$

B. $4\sqrt{7} - 9\sqrt{2}$

C. $4\sqrt{7} - 11\sqrt{2}$

D. $4\sqrt{7} - 21\sqrt{2}$

11. If $m : n = 2 : 1$, evaluate $\frac{3m^2 - 2n^2}{m^2 - mn}$.

- A. $\frac{3}{5}$
- B. $\frac{3}{4}$
- C. $\frac{5}{3}$
- D. $\frac{4}{3}$

12. H varies directly as p and inversely as the Square of y. If H= 1, p = 8 and y = 2, find H in terms of p and y?.

- A. $H = \frac{p}{y^2}$
- B. $H = \frac{p}{2y^2}$
- C. $H = \frac{2p}{y^2}$
- D. $H = \frac{p}{4y^2}$

13. solve $4x^2 - 16x + 15 = 0$

- A. $x = -1\frac{1}{2}$ or $-2\frac{1}{2}$
- B. $x = 1\frac{1}{2}$ or $-1\frac{1}{2}$
- C. $x = 1\frac{1}{2}$ or $2\frac{1}{2}$
- D. $x = 1\frac{1}{2}$ or $-2\frac{1}{2}$

14. Evaluate $\frac{0.42 \div 2.5}{0.5 \times 2.05}$ leaving your answer in standard form

- A. 1.639×10^{-2}
- B. 1.639×10^{-1}
- C. 1.639×10^1
- D. 1.639×10^1

15. Simplify $\log_{10}6 - 3\log_{10}3 + \frac{2}{23}\log_{10}27$

- A. $2\log_{10}3$
- B. $\log_{10}3$
- C. $\log_{10}2$
- D. $3\log_{10}2$

16. QBala sold an article for N6,900.00 and made a profit of 15%. Calculate his percentage profit if he had sold it for N6,600.00.

- A. 13 %
- B. 12%
- C. 10 %
- D. 5%

17. If $3p = 4q$ and $9p = 8q - 12$, find the value of pq.

- A. -12
- C. 7
- B. -7
- D. 12

18. If $(0.25)^y = 32$

- A. $-\frac{5}{2}$
- B. $-\frac{3}{2}$
- C. $\frac{5}{2}$
- D. $\frac{5}{2}$

19. There are 8 boys and 4 girls in a lift. What is the probability that the first person who steps out of the lift will be a boy?

- A. $\frac{1}{4}$
- B. $-\frac{2}{3}$
- C. $-\frac{1}{3}$
- D. $-\frac{3}{4}$

20. Simplify: $\frac{x^2-5x-14}{x^2-9x+14}$

- A. $\frac{x+2}{x-2}$
- B. $\frac{x-2}{x+4}$
- C. $\frac{x+7}{x-7}$
- D. $\frac{x-7}{x+7}$

21. Which of these values would make $\frac{3p-1}{p^2-p}$ undefined?

- A. -1
- B. $-\frac{1}{3}$
- C. $\frac{1}{3}$
- D. 1

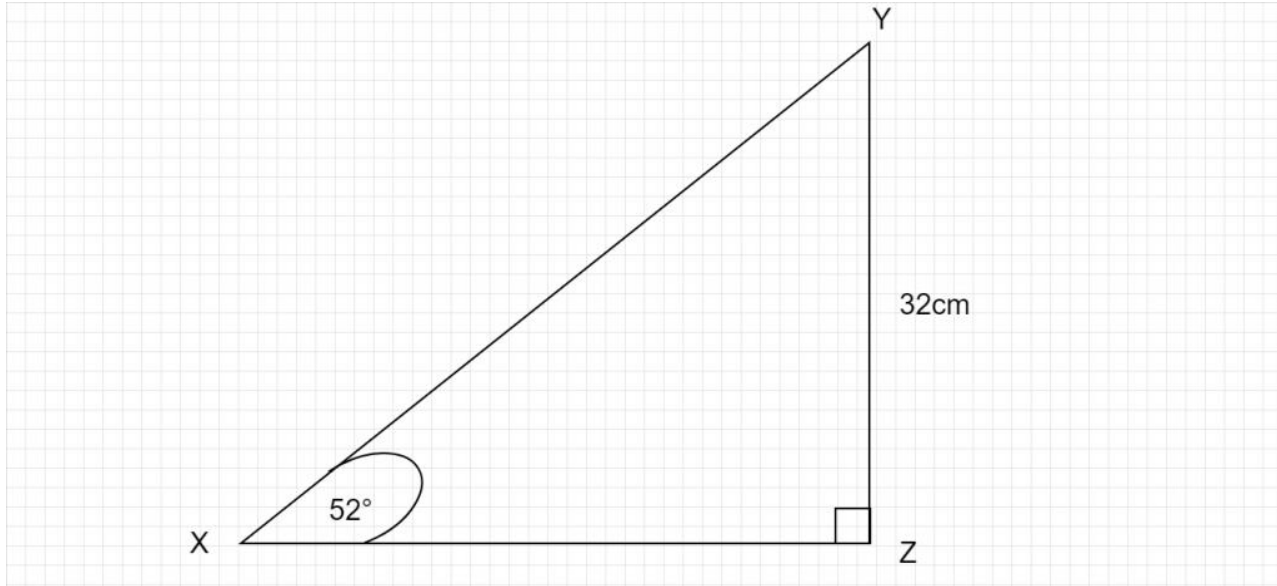
22. The total surface area of a solid cylinder is 20cm^2 . If the base diameter is 7 cm, calculate its height. $\pi = \frac{22}{7}$

- A. 2.0 cm
- B. 4.0 cm
- C. 4.5 cm
- D. 7.5 cm

23. If $2^a = \sqrt{64}$ and $\frac{b}{a} = 3$, evaluate $a^2 + b^2$.

- A. 48
- B. 90
- C. 160
- D. 250

24.



In Triangle XYZ, $|YZ| = 32$ cm, $\angle X = 52^\circ$. Find the length of the side XZ.

- A. 13 cm
- B. 20 cm
- C. 25 cm
- D. 31 cm

25. If $\log_x 2 = 0.3$, Evaluate $\log_x 8$

- A. 0.6
- B. 0.9
- C. 1.2
- D. 2.4

26. An arc subtends an angle of 72° at the centre of a circle. Find the length of the arc if the radius of the circle is 3.5 cm. {Take $\pi = \frac{22}{7}$ }

- A. 2.2 cm
- B. 4.4 cm
- C. 8.8 cm
- D. 6.6 cm

27. Make b the subject of the relation: $lb = \frac{1}{2}(a + b)h$

- A. $\frac{al}{2-h}$
- B. $\frac{al}{2l-h}$
- C. $\frac{al}{2l-h}$
- D. $\frac{ah}{2l-h}$

28. Eric sold his house through an agent who charged 8 % commission on the selling price. If Eric received \$117,760.00 after the sale, what was the selling price of the house?

- A. \$ 120,000.00
- B. \$ 125,000.00
- C. \$ 128,000.00
- D. \$ 130,000.00

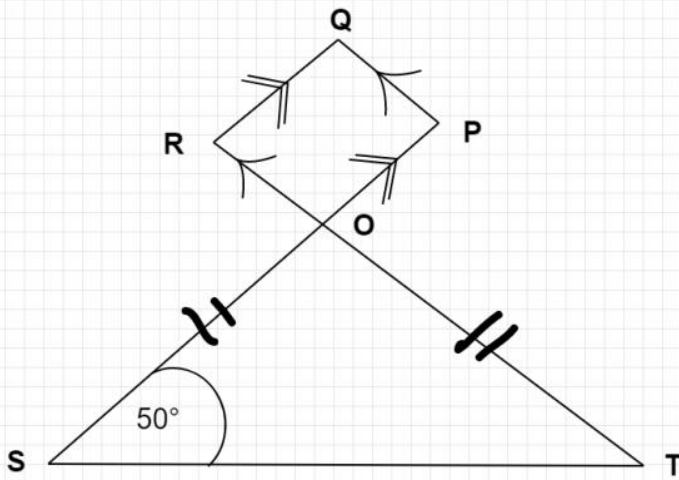
29. Find the angle which an arc of length 22 cm subtends at the centre of a circle of radius 15 cm.

[Take $\pi = 22/7$]

- A. 156°
- B. 96°
- C. 34°
- D. 70°

30. A rectangular board has length 15 cm and width x cm. If the sides are doubled, find its new area?

- A. $15x\text{cm}^2$
- B. $30x\text{cm}^2$
- C. $45x\text{cm}^2$
- D. $60x\text{cm}^2$



31. In the diagram, POS and ROT are straight lines. OPQR is a parallelogram, $OS = OT$ and $\angle S = 50^\circ$. Find $\angle R$.

- A. 160°
- B. 140°
- C. 120°
- D. 100°

32. Factorize completely: $(2x + 2y)(x - y) + (2x - 2y)(x + y)$

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

33. The interior angles of a polygon are $3x^\circ, 2x^\circ, 4x^\circ, 3x^\circ$ and $6x^\circ$. Find the size of the smallest angle of the polygon.

- A. 30°
- B. 40°
- C. 60°
- D. 80°

34. A box contains 2 white and 3 blue identical balls. If two balls are picked at random from the box, one after the other with replacement, what is the probability that they are of different colours?

- A. $\frac{12}{25}$
- B. $\frac{7}{20}$

- C. $\frac{5}{3}$
- D. $\frac{2}{3}$

35. Find the equation of a straight line passing through the point (1, -5) and having gradient of $\frac{3}{4}$.

- A. $3x-4y-23=0$
- B. $3x-4y+23=0$
- C. $3x+4y+23=0$
- D. $3x+4y-23=0$

36. The foot of a ladder is 6 m from the base of an electric pole. The top of the ladder rests against the pole at a point 8 m above the ground How long is the ladder.

- A. 7 m
- B. 10 m
- C. 12m
- D. 14 m

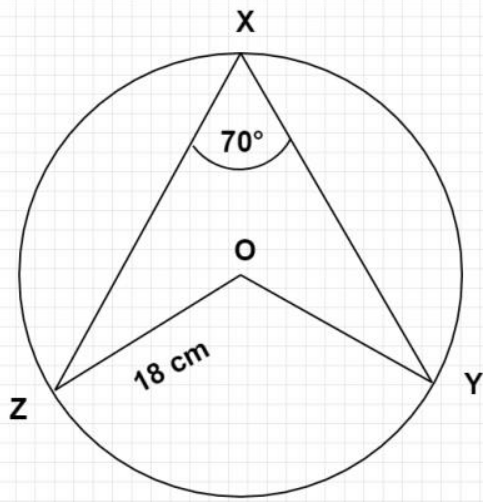
37. $\tan x = \frac{3}{4}, 0 < x < 90$, Evaluate $\frac{\cos x}{2\sin x}$

- A. $\frac{2}{3}$
- B. $\frac{4}{3}$
- C. $\frac{3}{4}$
- D. $\frac{8}{3}$

38. From the top of a vertical cliff 20 m high, a boat at sea can be sighted 75 m away and on the same horizontal position as the foot of the cliff. Calculate, correct to the nearest degree, the angle of depression of the boat from the top of the cliff.

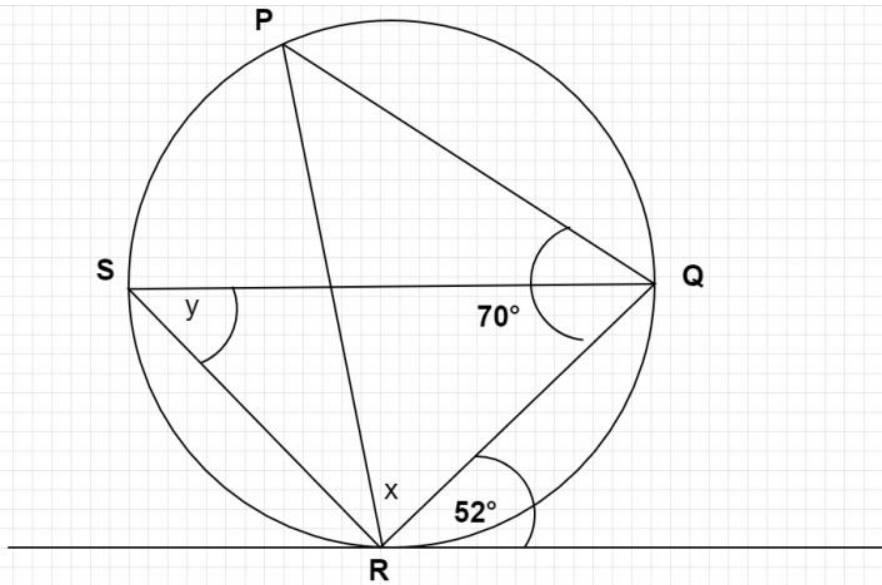
- A. 15°
- B. 16°
- C. 75°
- D. 56°

39.



In the diagram, O is the centre of the circle with radius 18 cm. If the angle $\angle X = 70^\circ$

- A. 80 cm
- B. 44 cm
- C. 22 cm
- D. 11 cm



In the diagram, RT is a tangent to the circle at R, $\angle Q = 70^\circ$. Calculate the value of y .

- A. 18°
- B. 55°
- C. 60°
- D. 60°

41. Calculate the value of x .

- A. 48°
- B. 55°

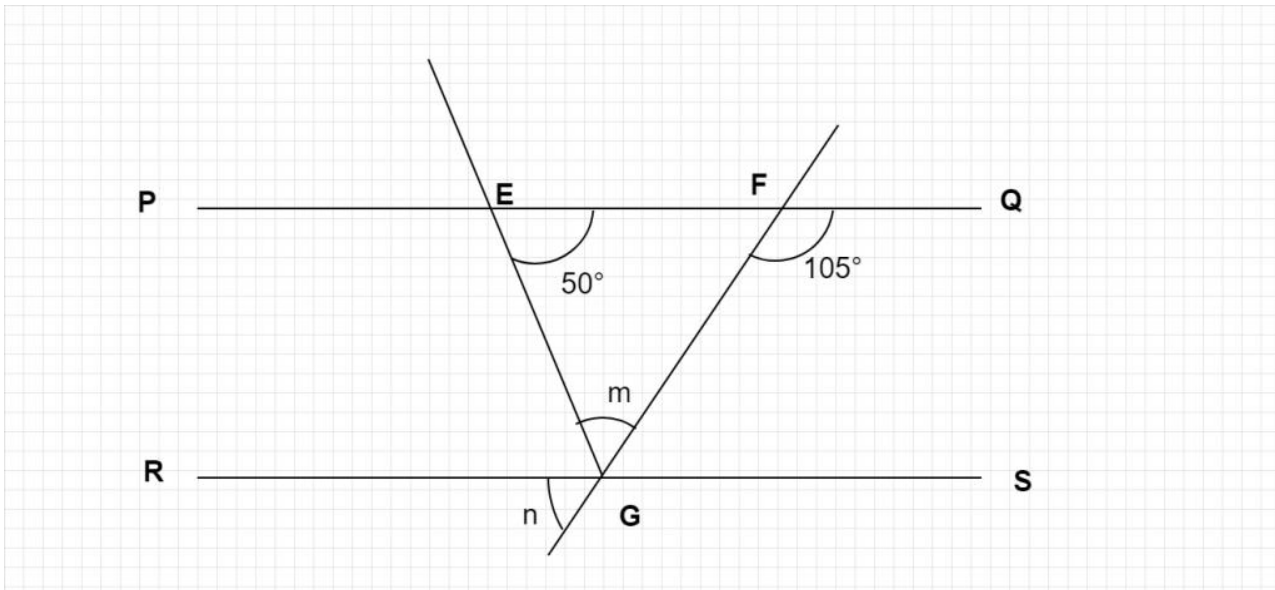
- C. 58°
- D. 70°

42. Calculate the variance of 4,4,7,8 and 9.

- A. 2.6
- B. 3.5
- C. 6.8
- D. 7.2

43. The fourth term of an Arithmetic progression (AP) is 37 and the first term is -20. Find the common difference.

- A. 17
- B. 19
- C. 57
- D. 63



In the diagram, P-Q is parallel to R-S, 44. Find the value of m

- A. 55°
- B. 75°
- C. 105°
- D. 130°

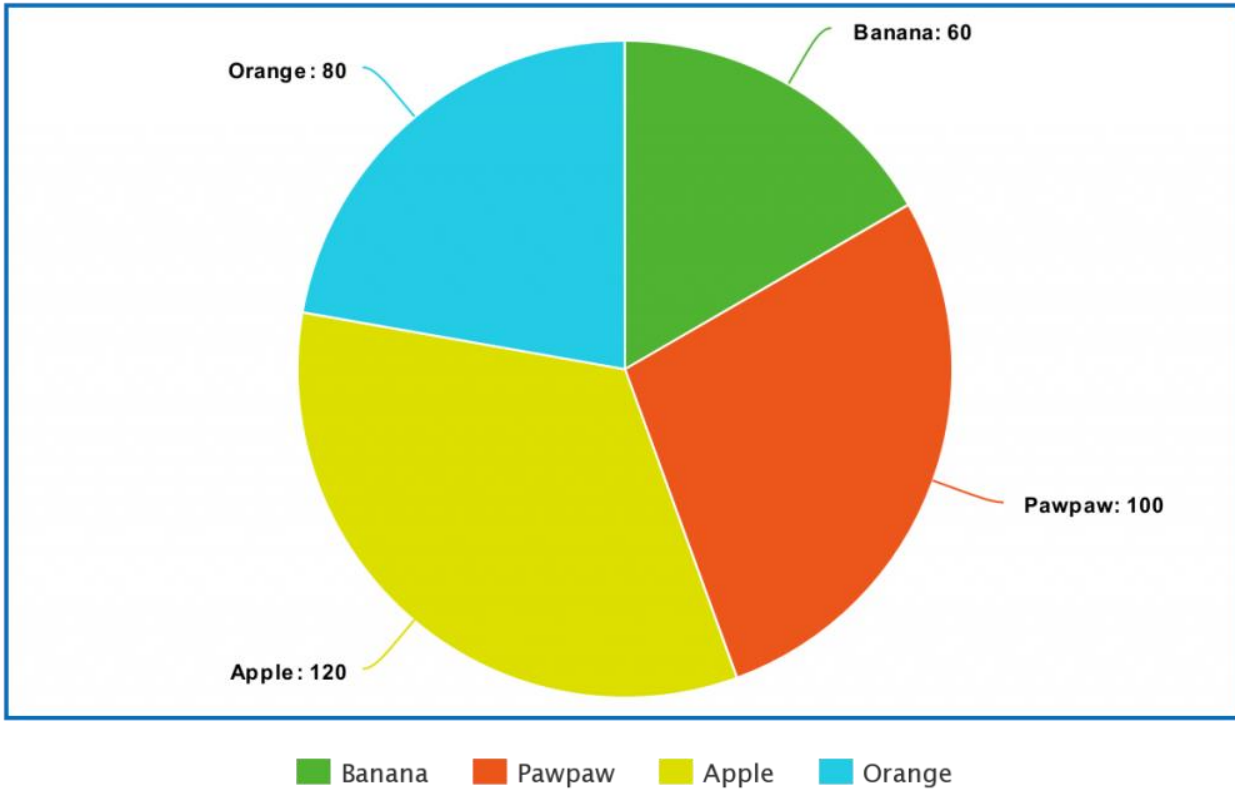
45. Find the value of n.

- A. 130°
- B. 75°
- C. 55°
- D. 40°

46. A box contains 5 red, 6 green and 7 yellow pencils of the same size. What is the probability of picking a green pencil at random?

- A. $\frac{1}{2}$
- B. $\frac{1}{3}$
- C. $\frac{1}{4}$
- D. $\frac{1}{6}$

47.



meta-chart.com

The pie chart represents fruits on display in a grocery shop. If there are 60 oranges on display, how many apples are there?

- A. 40
- B. 80
- C. 90
- D. 70

8	18	10	14	18	11	13
14	13	17	15	8	16	13

Use this information to answer questions 48 to 50.

48. Find the mode of the distribution.

- A. 8
- B. 13

- C. 14
- D. 18

49. Find the median score.

- A. 13.0
- B. 13.5
- C. 14.0
- D. 14.5

50. How many students scored above the mean score?

- A. 7
- B. 8
- C. 9
- D. 10