

maths

JHS 3 | Mathematics | First Term — 2025-2026 | Duration: 60 minutes | Total Marks: 70

Instructions:

SECTION A — MULTIPLE CHOICE QUESTIONS

1. What is $2^3 + 2^2$? (1 mark)
 - A. 8
 - B. 10
 - C. 12
 - D. 14
2. Shade $\frac{3}{4}$ of a rectangle. What fraction of the rectangle is unshaded? (1 mark)
 - A. $\frac{1}{4}$
 - B. $\frac{1}{2}$
 - C. $\frac{3}{4}$
 - D. $\frac{1}{3}$
3. What is 15% of 200? (1 mark)
 - A. 20
 - B. 25
 - C. 30
 - D. 35
4. Simplify $5x + 3x$. (1 mark)
 - A. $8x$
 - B. $8x^2$
 - C. $15x$
 - D. $15x^2$
5. Factorize $3x + 4xy$. (1 mark)
 - A. $x(3 + 4y)$
 - B. $x(3 + 4x)$
 - C. $3x(1 + y)$
 - D. $xy(3 + 4)$
6. What is $\frac{15}{10}$ in its simplest form? (1 mark)
 - A. $\frac{5}{3}$
 - B. $\frac{3}{2}$
 - C. $\frac{1}{2}$
 - D. $\frac{5}{2}$

7. How many sides does a decagon have? (1 mark)
- A. 6
 - B. 8
 - C. 10
 - D. 12
8. What is the probability of rolling a 6 on a fair die? (1 mark)
- A. $\frac{1}{6}$
 - B. $\frac{1}{2}$
 - C. $\frac{1}{3}$
 - D. $\frac{1}{4}$
9. What type of fraction is $\frac{7}{4}$? (1 mark)
- A. Proper
 - B. Improper
 - C. Mixed
 - D. Unit
10. If $a = 5$ and $b = 3$ (1 mark)
- A. what is $a^2 + b^2$?
 - B. 16
 - C. 25
 - D. 34
11. The area of a rectangle is 24cm^2 . If length is 8cm (1 mark)
- A. find the width.
 - B. 2cm
 - C. 3cm
 - D. 4cm
12. Which data collection method involves asking people questions? (1 mark)
- A. Observation
 - B. Experiment
 - C. Interview
 - D. Database
13. What is the formula for the sum of interior angles of an n-sided polygon? (1 mark)
- A. $(n-2) \times 90$
 - B. $(n-2) \times 180$
 - C. $(n-1) \times 180$
 - D. $(n-1) \times 90$

14. What is the LCM of 4 and 6? (1 mark)

- A. 12
- B. 18
- C. 24
- D. 36

15. Solve the equation $2x - 3 = 15$. (1 mark)

- A. 6
- B. 7
- C. 8
- D. 9

16. The sum of the lengths of two sides of a triangle is always... (1 mark)

- A. Greater than the third side
- B. Less than the third side
- C. Equal to the third side
- D. Twice the third side

17. Make x the subject of the formula $y = mx + c$. (1 mark)

- A. $x = (y - c)/m$
- B. $x = (y + c)/m$
- C. $x = m(y - c)$
- D. $x = m/(y - c)$

18. What is the supplement of a 110° angle? (1 mark)

- A. 70°
- B. 90°
- C. 180°
- D. 20°

19. Calculate $\frac{3}{4} + \frac{7}{8}$. (1 mark)

- A. $\frac{10}{12}$
- B. $\frac{13}{8}$
- C. $\frac{11}{8}$
- D. $\frac{17}{8}$

20. What is the back bearing of 060° ? (1 mark)

- A. 060°
- B. 120°
- C. 240°
- D. 300°

- 21.** The graph showing proportional relationships is a... (1 mark)
- A. Curve line through the origin
 - B. Straight line through the origin
 - C. Straight line not through origin
 - D. Parabola
- 22.** What is the value of $\sqrt{2}$ approximated to three decimal places? (1 mark)
- A. 1.412
 - B. 1.414
 - C. 1.416
 - D. 1.418
- 23.** Find the simple interest on GH¢4500 at 3% per annum for 3 years. (1 mark)
- A. GH¢405
 - B. GH¢135
 - C. GH¢450
 - D. GH¢540
- 24.** Simplify 3^3 . (1 mark)
- A. 3^3
 - B. 9^3
 - C. 3^9
 - D. 2^3
- 25.** What is the decimal equivalent of $\frac{1}{8}$? (1 mark)
- A. 0.1
 - B. 0.125
 - C. 0.25
 - D. 0.2
- 26.** The sum of the interior angles of a hexagon (6 sides) is... (1 mark)
- A. 540°
 - B. 720°
 - C. 900°
 - D. 360°
- 27.** Find the equation of a line with slope 2 and y-intercept -3. (1 mark)
- A. $y = 2x + 3$
 - B. $y = -2x - 3$
 - C. $y = 2x - 3$
 - D. $y = x - 3$

28. Graph the solution of $x \geq 4$ on a number line. (Conceptual) (1 mark)

- A. Closed circle at 4 shading left
- B. Open circle at 4 shading right
- C. Closed circle at 4 shading right
- D. Open circle at 4 shading left

29. What is the coefficient of y in $5xy$? (1 mark)

- A. 5
- B. $5x$
- C. xy
- D. y

30. The area of a circle is 154cm^2 . Find the radius using $\pi = \frac{22}{7}$. (1 mark)

- A. 5cm
- B. 6cm
- C. 7cm
- D. 8cm

31. Calculate $\frac{4}{5} - \frac{1}{6}$. (1 mark)

- A. $\frac{19}{30}$
- B. $\frac{23}{30}$
- C. $\frac{3}{4}$
- D. $\frac{5}{11}$

32. What is the volume of a cylinder with radius 7cm and height 21cm using $\pi = \frac{22}{7}$? (1 mark)

- A. 3234 cm^3
- B. 1078 cm^3
- C. 462 cm^3
- D. 154 cm^3

33. Solve the inequality $2x + 7 > \frac{5}{2}$. (1 mark)

- A. $x > -2.25$
- B. $x > 2.25$
- C. $x < -2.25$
- D. $x > -\frac{9}{4}$

34. A student scores 70 and 76. What score in the third test gives an average of 80 or higher? (1 mark)

- A. 90
- B. 92
- C. 94

D. 96

35. Simplify $34 \div 32 + 40 - 23 \times 32 \div 9$ using BODMAS. (1 mark)

A. 36

B. 40

C. 38

D. 42

36. Solve the inequality $(1/2)(5x - 4) < x + 11/2$. (1 mark)

A. $x < 5$

B. $x > 5$

C. $x < 15$

D. $x > 15$

37. A man paid GH¢290 for 11 books. Geography books cost GH¢30 and history books cost GH¢20. How many geography books did he buy? (1 mark)

A. 5

B. 6

C. 7

D. 8

38. A trader sells oranges from two baskets. Basket A had 85 oranges and she sold 48. She sold 59 oranges from basket B and was left with the same number as in Basket A. How many were originally in Basket B? (1 mark)

A. 96

B. 85

C. 59

D. 48

39. The price of a jacket is three times that of a shirt. A jacket costs GH¢560.65. Mr Mensa bought two jackets and four shirts. What is the total cost correct to two decimal places? (1 mark)

A. GH¢1121.30

B. GH¢1495.07

C. GH¢1868.83

D. GH¢1682.50

SECTION C — SHORT ANSWER / THEORY

40. Use a ruler and compasses to construct an angle of 60° at a point on a line segment. Describe your steps. (1 mark)

41. Construct an angle of 90° at point P on line AB. Then bisect this angle to obtain 45° . List the steps. (1 mark)

42. Construct an angle of 120° using a pair of compasses. Verify your construction with a protractor. Describe the process. (1 mark)

43. Construct an angle of 75° by first constructing 90° and then 60° and bisecting the difference. Explain your steps. (1 mark)

44. Draw a line segment $AB = 8$ cm. Construct its perpendicular bisector. Label the midpoint M. What is AM? (1 mark)

45. Construct a triangle ABC with $AB = 6$ cm (1 mark)

46. Construct an equilateral triangle with side length 5 cm. What is the measure of each angle? (1 mark)

47. Construct a right-angled triangle with hypotenuse 10 cm and one leg 6 cm. What is the length of the other leg? (1 mark)

48. Construct an isosceles triangle PQR with $PQ = PR = 7$ cm and base $QR = 5$ cm. Measure the base angles. (1 mark)

49. Draw a circle of radius 3 cm. Construct two chords and then construct their perpendicular bisectors. Where do they intersect? (1 mark)

50. Construct a circle of radius 4 cm. Inscribe a regular hexagon inside it. Describe your steps. (1 mark)

51. Construct a triangle ABC. Bisect angles A and B. Label the intersection point I. Measure the distance from I to side AB. What is point I called? (1 mark)

52. Construct a square of side 6 cm. Draw both diagonals. What is the length of each diagonal? (1 mark)

53. Construct a rectangle with length 8 cm and width 5 cm. Calculate its perimeter and area. (1 mark)

54. Construct a parallelogram PQRS with $PQ = 7\text{ cm}$ (1 mark)

55. On a Cartesian plane (1 mark)

56. Plot triangle P(1 (1 mark)

57. Plot triangle A(1 (1 mark)

58. Plot triangle X(1 (1 mark)

59. On a Cartesian plane (1 mark)

60. On a graph (1 mark)

61. Draw a distance-time graph for the following: A car travels 20 km in 30 min (1 mark)

62. Draw a pie chart to represent the following data: Food = GH¢120 (1 mark)

63. Draw a bar chart for the following test scores: 10-20 (3 students) (1 mark)

64. The diagram shows a number line with an open circle at 3 and shading to the right. Write the inequality represented. (2 marks)

65. The diagram shows a circle with a chord of length 10 cm at a distance of 3 cm from the centre. Find the radius of the circle. (5 marks)