



Myfuture CBC Revision

essential mathematics - Grade 10

Question Paper

1. A wholesaler gives a trade discount of 15% on Ksh 20,000 order. How much does the buyer pay?

- A. Ksh 17,500
- B. Ksh 17,000
- C. Ksh 16,500
- D. Ksh 16,800

2. A lender charges simple interest and receives Ksh 1,125 interest on a loan of Ksh 5,000 over 3 years. What is the annual rate (%)?

- A. 6%
- B. 8%
- C. 7.5%
- D. 5%

3. A set of scores ranges from 12 to 55. If you want about 8 equal classes for a frequency table, what is a suitable class width?

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

4. Which of the following has a non-terminating, non-repeating decimal expansion?

- A. 10
- B. $\frac{3}{8}$
- C. $\frac{7}{20}$
- D. 0.125

5. A borrower repays Ksh 2,600 after 3 years on a loan of Ksh 2,000. What was the simple interest rate per annum?

- A. 12%
- B. 11%
- C. 10%
- D. 9%

6. Express 0.375 as a fraction in simplest form.

- A. $\frac{1}{4}$
- B. $\frac{75}{200}$
- C. $\frac{37}{100}$
- D. $\frac{3}{8}$

7. In a class of 50 students, 15 scored above 80 marks. If one student is chosen at random, what is the probability they scored above 80?

- A. $\frac{1}{3}$
- B. $\frac{7}{10}$
- C. $\frac{15}{100}$
- D. $\frac{3}{10}$

8. If a fair die is rolled 40 times, approximately how many times would you expect a six to occur?

- A. 6.7
- B. 4.0
- C. 2.5
- D. 10.0

9. If a dataset has one very large outlier, which measure is least affected?

- A. Range
- B. Median
- C. Mean
- D. Sum of values

10. If a boxplot shows the median closer to the lower quartile (Q1) than to the upper quartile (Q3), what does this suggest about the distribution?

- A. There are no outliers
- B. The distribution is perfectly symmetrical
- C. The distribution is skewed to the right (positively skewed)
- D. The distribution is skewed to the left (negatively skewed)

11. If the cumulative frequency for scores 50 is 120, what does this mean?

- A. There are 120 score values
- B. 120 students scored 50 or less
- C. 120 students scored exactly 50
- D. 120 students scored more than 50

12. A bag contains 3 red balls and 2 blue balls. What is the probability of drawing a red ball at random?

- A. $\frac{2}{5}$
- B. $\frac{1}{2}$
- C. $\frac{1}{5}$
- D. $\frac{3}{5}$

13. Which type of number is 2?

- A. Rational
- B. Integer
- C. Irrational
- D. Natural number

14. Which of the following is a surd (an irrational root left in root form)?

- A. 3
- B. 0.5
- C. 9
- D. $\frac{4}{9}$

15. Calculate $-5 + 3$.

- A. 8
- B. -2
- C. 2
- D. -8

16. In a class of 20 students, 6 wear shoe size 7, 8 wear size 6 and 6 wear size 5. If a student is chosen at random, what is the probability they wear size 6?

- A. $\frac{1}{2}$
- B. $\frac{6}{20}$
- C. $\frac{2}{5}$
- D. $\frac{8}{12}$

17. A fair die is rolled. What is the probability of NOT getting a 6?

- A. $\frac{1}{6}$
- B. $\frac{1}{2}$
- C. $\frac{5}{6}$
- D. $\frac{6}{6}$

18. Which sampling method is most likely to produce a biased sample?

- A. Only asking students in the maths club for opinions on all clubs
- B. Dividing students by form and sampling from each form
- C. Randomly selecting student names from the whole school list
- D. Choosing every 5th student from a complete class list

19. Order the numbers from smallest to largest: -1, -0.75, 0.2, 0.5.

- A. -1, 0.2, -0.75, 0.5
- B. -0.75, -1, 0.2, 0.5
- C. 0.5, 0.2, -0.75, -1
- D. -1, -0.75, 0.2, 0.5

20. A fair six-sided die is rolled. What is the probability of getting an even number?

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

21. What is the mode of the data 2, 2, 3, 4, 2, 5?

- A. 5
- B. 4
- C. 2
- D. 3

22. A trader marks up the cost price by 25%. If the cost price is Ksh 2,400, what is the marked price?

- A. Ksh 2,600
- B. Ksh 3,000
- C. Ksh 2,700
- D. Ksh 2,900

23. Which of the following best describes the set of real numbers?

- A. All rational and irrational numbers
- B. Only whole numbers and their negatives
- C. Only fractions and decimals
- D. Only integers and natural numbers

24. A fair six-sided die is rolled. What is the probability of getting a prime number?

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

25. A trader declares a 12% profit on cost. If his cost is Ksh 25,000, what is the selling price?

- A. Ksh 29,000
- B. Ksh 26,500
- C. Ksh 27,500
- D. Ksh 28,000

26. A spinner is divided into 6 equal sectors: 3 red, 2 blue and 1 green. What is the probability it lands on blue?

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

27. Which statement is true about real numbers a and b with $a < b$?

- A. There exists at least one irrational number between a and b
- B. There are no rational numbers between a and b
- C. There are only finitely many real numbers between a and b
- D. There cannot be any integers between a and b

28. If Ksh 8,000 is invested at 5% simple interest per annum, how much total amount will there be after 4 years?

- A. Ksh 9,200
- B. Ksh 9,600
- C. Ksh 10,000
- D. Ksh 8,400

29. A raffle has tickets numbered 1 to 100. One ticket is drawn at random. What is the probability the number is divisible by 5?

- A. $\frac{5}{100}$
- B. $\frac{1}{5}$
- C. $\frac{1}{20}$
- D. $\frac{1}{10}$

30. A loan of Ksh 4,500 attracts simple interest at 6% per annum. What is the interest for 2 years 6 months?

- A. Ksh 675.0
- B. Ksh 675
- C. Ksh 675.00
- D. Ksh 675.00

31. What is the relationship between variance and standard deviation?

- A. Standard deviation is the square root of the variance
- B. They are always equal
- C. Variance is the square root of the standard deviation
- D. Variance is standard deviation multiplied by the mean

32. Find the absolute value of $\frac{3}{4}$.

- A. $\frac{3}{4}$
- B. 0
- C. 1.75
- D. $\frac{3}{4}$

33. Which variable is qualitative (categorical)?

- A. Height in centimetres
- B. Marks scored out of 100
- C. Number of books owned
- D. Colour of school ties

34. A bank discounts a bill of exchange of face value Ksh 50,000 for 4 months at a simple discount rate of 9% per annum. What is the banker's discount?

- A. Ksh 1,800
- B. Ksh 1,000
- C. Ksh 1,250
- D. Ksh 1,500

35. A trader bought goods for Ksh 9,200 and sold them at a 15% profit. He then gave a customer a 10% discount on the selling price. What is the final price paid by the customer?

- A. Ksh 9,500
- B. Ksh 10,000
- C. Ksh 9,828
- D. Ksh 10,580

36. A letter is chosen at random from the word 'KENYA'. What is the probability the letter is a vowel?

- A. $\frac{1}{5}$
- B. $\frac{2}{5}$
- C. $\frac{2}{6}$
- D. $\frac{3}{5}$

37. If a commodity's price increases by 12% and later decreases by 10%, the net percentage change is approximately:

- A. 2% decrease
- B. 1.2% increase
- C. 1.2% decrease
- D. 2% increase

38. $0.142857142857\dots$ (repeating) is equal to which fraction?

- A. $\frac{1}{6}$
- B. $\frac{1}{7}$
- C. $\frac{2}{7}$
- D. $\frac{1}{8}$

39. If the weather forecast says a 0.3 chance of rain, what is this probability as a percentage?

- A. 30%
- B. 300%
- C. 3%
- D. 0.3%

40. Which scatter plot pattern indicates a positive correlation between two variables (e.g., height and shoe size)?

- A. Points form a horizontal band
- B. Points tend to fall from left to right
- C. Points form a vertical band
- D. Points tend to rise from left to right

41. Rationalise the denominator of $\frac{5}{2}$ and give the result in simplest form.

- A. 52
- B. $\frac{5}{22}$
- C. $\frac{2}{5}$
- D. $\frac{52}{2}$

42. A student performed an experiment 20 times and got the event success 7 times. What is the experimental probability of success?

- A. $\frac{7}{13}$
- B. $\frac{3}{20}$
- C. $\frac{1}{2}$
- D. $\frac{7}{20}$

43. Which chart is best to show how a total number of students is split into different subjects as percentages?

- A. Pie chart
- B. Line graph
- C. Histogram
- D. Scatter plot

44. Which decimal expansion indicates an irrational number?

- A. 3.14159265358979... (digits do not repeat)
- B. 0.272727... (repeating)
- C. 0.625 (terminating)
- D. 0.454545... (repeating)

45. What is the median of the marks 12, 15, 20, 22?

- A. 20
- B. 15
- C. 17.5
- D. 18.5

46. Two fair coins are tossed. What is the probability of getting at least one head?

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

47. What is the decimal form of $\frac{7}{20}$?

- A. 0.035
- B. 0.35
- C. 0.7
- D. 0.75

48. A bag contains 5 red, 3 blue and 2 green marbles. If one marble is taken at random, what is the probability it is green?

- A. $\frac{2}{10}$
- B. $\frac{1}{10}$
- C. $\frac{3}{10}$
- D. $\frac{5}{10}$

49. Which number is an integer?

- A. 0.75
- B. $\frac{3}{2}$
- C. 2
- D. -7

50. A fair six-sided die is rolled. What is the probability of getting an odd number?

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