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Mathematics, 2017 EC, Grade 8 model exam, Lideta

Grade 8 · Mathematics · 2017 E.C.

Time allowed: 120 minutes | **Questions:** 41 | **Total marks:** 41

Name _____ Grade _____ ID No. _____ Date _____

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1. What is the number of elements of set $ A = \{4, 5, 4, 7, 4\} $? (1)

A. 3
B. 4
C. 5
D. 6

2. Which of the following statement is True about relations among sets? (1)

A. All equal sets are proper subsets of each other
B. Empty set is a subset of any set
C. All equivalent sets are equal
D. Any set is a proper subset of itself

3. If $ A \subset B $, then which of the following statement is true? (1)

A. $A \cap B = A$
B. $A \cup B = A$
C. $B \subseteq A$
D. $B \subset A$

4. A set of numbers containing all counting numbers and zero is called: (1)

A. Natural number
B. Whole number
C. Integer number
D. Rational number

5. Which one of the following is the set of whole numbers? (1)

A. $\{0, 2, 4, 6, \dots\}$
B. $\{1, 2, 3, \dots\}$
C. $\{0, 1, 2, 3, \dots\}$
D. $\{\dots, -3, -2, -1, 0, 1, 2, 3, \dots\}$

6. The opposite of integer number $ a $ is equal to: (1)

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

7. Which of the following is the number of elements in the set $ A = \{ 1, 2, 3, 4, 5 \} $?\ (1)

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

8. Which of the following is the set of prime numbers less than 10? (1)

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

9. Which of the following is the set of multiples of 3 less than 15? (1)

A. $\{3, 6, 9, 12\}$
B. $\{3, 6, 9, 12, 15\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

10. Which of the following is the set of numbers divisible by 4 less than 20? (1)

A. $\{4, 8, 12, 16\}$
B. $\{4, 8, 12, 16, 20\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

11. Which of the following is the set of perfect squares less than 20? (1)

A. $\{1, 4, 9, 16\}$
B. $\{1, 4, 9, 16, 20\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

12. Which of the following is the set of prime numbers between 10 and 20? (1)

A. $\{11, 13, 17, 19\}$
B. $\{11, 13, 17, 19, 20\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

13. Which of the following is the set of multiples of 5 less than 20? (1)

A. $\{5, 10, 15\}$
B. $\{5, 10, 15, 20\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

14. Which of the following is the set of numbers divisible by 6 less than 20? (1)

A. $\{6, 12, 18\}$
B. $\{6, 12, 18, 20\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

15. Which of the following is the set of prime numbers between 20 and 30? (1)

A. $\{23, 29\}$
B. $\{23, 29, 30\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

16. Which of the following is the set of multiples of 7 less than 30? (1)

A. $\{7, 14, 21, 28\}$
B. $\{7, 14, 21, 28, 30\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

17. Which of the following is the set of numbers divisible by 8 less than 30? (1)

A. $\{8, 16, 24\}$
B. $\{8, 16, 24, 30\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

18. Which of the following is the set of perfect squares less than 30? (1)

A. $\{1, 4, 9, 16, 25\}$
B. $\{1, 4, 9, 16, 25, 30\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

19. Which of the following is the set of prime numbers between 30 and 40? (1)

A. $\{31, 37\}$
B. $\{31, 37, 40\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

20. Which of the following is the set of multiples of 9 less than 40? (1)

A. $\{9, 18, 27, 36\}$
B. $\{9, 18, 27, 36, 40\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

21. Which of the following is the set of perfect cubes less than 40? (1)

A. $\{1, 8, 27\}$
B. $\{1, 8, 27, 64\}$
C. $\{1, 2, 3, 4, 5\}$
D. $\{2, 4, 6, 8, 10\}$

22. What is the value of m if a point $(2, -6)$ lies on the line $y = mx + 2$? (1)

A. -2
B. -4
C. 3
D. -8

23. On a number line, when we add a negative integer, we: (1)

A. Move to the right
B. Do not move at all
C. Move to the left
D. None

24. The solution set of $|x - 6| = 10$ is: (1)

A. $\{4, -16\}$
B. $\{-6, 10\}$
C. $\{-4, 16\}$
D. $\{10, -6\}$

25. Which one of the following is the equivalent fraction of $\frac{12}{20}$? (1)

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

26. Which one of the following numbers are in descending order? (1)

A. $\frac{7}{12}, \frac{2}{3}, \frac{3}{2}$
B. $\frac{3}{2}, \frac{7}{12}, \frac{2}{3}$
C. $\frac{3}{2}, \frac{2}{3}, \frac{7}{12}$
D. $\frac{2}{3}, \frac{3}{2}, \frac{7}{12}$

27. The sum of $\frac{1}{3} + \frac{2}{3}$ is equal to: (1)

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

28. $\frac{7}{9} - \frac{4}{3} =$ (1)

A. $\frac{-9}{5}$
B. $\frac{-5}{9}$
C. $\frac{3}{6}$
D. $\frac{5}{9}$

29. The product of $2 \frac{5}{7} \times \left(-\frac{3}{2}\right) = $ (1)

A. $\frac{-57}{14}$
B. $\frac{-15}{7}$
C. $\frac{10}{9}$
D. $\frac{10}{3}$

30. If Birr 1200 is invested at 10% simple interest per annum, then what is the simple interest after 5 years? (1)

A. 800 Birr
B. 500 Birr
C. 700 Birr
D. 600 Birr

31. If $X = \frac{-2}{3}$, then $X^2 = $ (1)

A. $\frac{-4}{6}$
B. $\frac{4}{6}$
C. $\frac{4}{9}$
D. $\frac{-4}{9}$

32. $\sqrt{\frac{25}{9}} =$ (1)

A. $\frac{5}{3}$ **B.** $\frac{14}{9}$

C. $\frac{3}{5}$ **D.** $\frac{7}{10}$

33. Which one of the following numbers is both a perfect square and a perfect cube? (1)

A. 81 **B.** 64

C. 100 **D.** 36

34. $\sqrt[3]{0.001}$ is equal to: (1)

A. 0.01 **B.** 0.1

C. 0.001 **D.** 0.0001

35. The area of a square park is $81m^2$. Its length of side is equal to: (1)

A. 27 m **B.** 6 m

C. 9 m **D.** 3 m

36. The cube of 0.4 is equal to: (1)

A. 0.16 **B.** 0.064

C. $\frac{64}{100}$ **D.** $\frac{16}{100}$

37. Which of the following points does not satisfy the equation $y = 4x$? (1)

A. $(0, 0)$ **B.** $(2, 8)$

C. $(-1, 4)$ **D.** $(3, 12)$

38. If the point $P(a, 3)$ lies on the line given by the equation $12x - 2y = 0$, then what is the value of a? (1)

A. $\frac{1}{2}$ **B.** $\frac{4}{3}$

C. $\frac{3}{4}$ **D.** -3

39. What is the solution set of the inequality $\frac{x+1}{3} > \frac{2x}{5}$ in the set of natural numbers? (1)

A. $\{1, 2\}$ **B.** $\{1, 2, 3\}$

C. $\{1, 2, 3, 4, 5\}$ **D.** $\{1, 2, 3, 4\}$

40. The solution set of $2x - 5 < x + 1, x \in \mathbb{Q}$ is: (1)

A. $\{x : x < -4\}$ **B.** $\{x : x > 6\}$

C. $\{x : x > -4\}$ **D.** $\{x : x < 6\}$

41. The sum of the age of the mother and her daughter is 68 years. The mother is 22 years older than her daughter. How old is her mother? (1)

A. 45 years **B.** 46 years

C. 23 years **D.** 50 years

END OF THE EXAMINATION

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