Here's the **Grade 5 Math Competition - Multiple Choice** with **35 questions**, divided into **Number Theory, Logic, Geometry, Arithmetic, and Combinatorics**.

Grade 5 Math Competition - Multiple Choice

1-5: Number Theory

1. What is the greatest common divisor (GCD) of 48 and 60?
    a) 6
    b) 8
    c) 12
    d) 24
    Answer: c) 12

2. What is the least common multiple (LCM) of 8 and 12?
    a) 24
    b) 36
    c) 48
    d) 96
    Answer: a) 24

3. What is the sum of the prime factors of 30?
    a) 8
    b) 10
    c) 12
    d) 15
    Answer: b) 10

4. Which of the following numbers is a prime number?
    a) 15
    b) 17
    c) 21
    d) 25
    Answer: b) 17

5. What is the smallest multiple of 5 greater than 50?
    a) 52
    b) 55
    c) 60

d) 65

Answer: b) 55

6-10: Logic

6. What number comes next in the sequence: 1, 4, 9, 16, _?
   a) 20
   b) 25
   c) 30
   d) 36
   Answer: b) 25

7. If a book costs $12 and you buy 3 books, how much do you pay in total?
   a) $36
   b) $24
   c) $30
   d) $42
   Answer: a) $36

8. Which number is greater: 7 × 6 or 8 × 5?
   a) 7 × 6
   b) 8 × 5
   c) Both are equal
   d) Neither
   Answer: a) 7 × 6

9. What is the difference between 245 and 185?
   a) 55
   b) 60
   c) 50
   d) 70
   Answer: b) 60

10. If you divide 64 by 8, what is the quotient?
    a) 6
    b) 7
    c) 8
    d) 9
    Answer: c) 8

11-15: Geometry

11. What is the area of a rectangle with a length of 10 units and a width of 4 units?
    a) 40 square units
    b) 20 square units
    c) 24 square units
    d) 50 square units
    Answer: a) 40 square units

12. What is the perimeter of a square with side length 6 units?
    a) 24 units
    b) 36 units
    c) 48 units
    d) 60 units
    Answer: a) 24 units

13. How many degrees are in a straight angle?
    a) 90°
    b) 180°
    c) 360°
    d) 120°
    Answer: b) 180°

14. How many edges does a rectangular prism have?
    a) 6
    b) 8
    c) 10
    d) 12
    Answer: d) 12

15. What is the volume of a cube with side length 3 units?
    a) 9 cubic units
    b) 18 cubic units
    c) 27 cubic units
    d) 36 cubic units
    Answer: c) 27 cubic units

16-20: Arithmetic

16. What is 45 + 57?
     a) 102
     b) 92
     c) 108
     d) 112
     Answer: b) 102

17. What is 9 × 8?
     a) 54
     b) 72
     c) 82
     d) 90
     Answer: b) 72

18. If you subtract 124 from 289, what is the result?
     a) 145
     b) 155
     c) 175
     d) 165
     Answer: b) 165

19. What is 144 ÷ 12?
     a) 10
     b) 12
     c) 14
     d) 16
     Answer: b) 12

20. What is 25% of 200?
     a) 40
     b) 50
     c) 60
     d) 70
     Answer: b) 50

21-25: Combinatorics

21. How many different ways can you arrange the letters in the word "MATH"?
     a) 12
     b) 24

c) 30

d) 36

Answer: b) 24

22. How many ways can you choose 3 out of 6 candies?

a) 8

b) 12

c) 15

d) 20

Answer: c) 20

23. You have 5 different colored shirts. How many ways can you choose one shirt?

a) 3

b) 5

c) 4

d) 6

Answer: b) 5

24. How many ways can you arrange the letters in the word "APPLE"?

a) 60

b) 100

c) 120

d) 180

Answer: a) 60

25. You have 3 types of fruit and 4 types of juice. How many different combinations of fruit and juice can you make?

a) 10

b) 12

c) 7

d) 9

Answer: b) 12

26-30: Number Theory

26. What is the prime factorization of 72?

a) $2 \times 2 \times 3 \times 3 \times 3$

b) $2 \times 3 \times 6$

c) $2 \times 2 \times 2 \times 3$

d) 2 × 3 × 4

Answer: a) 2 × 2 × 3 × 3 × 3

27. What is the least common multiple of 10 and 15?

    a) 30

    b) 45

    c) 20

    d) 25

    Answer: a) 30

28. What is the greatest common divisor of 36 and 48?

    a) 4

    b) 6

    c) 12

    d) 18

    Answer: c) 12

29. How many divisors does the number 36 have?

    a) 6

    b) 9

    c) 12

    d) 18

    Answer: b) 9

30. What is the sum of all factors of 12?

    a) 28

    b) 36

    c) 24

    d) 18

    Answer: a) 28

31-35: Geometry & Arithmetic

31. What is the area of a triangle with a base of 10 units and a height of 6 units?

    a) 30 square units

    b) 25 square units

    c) 60 square units

    d) 50 square units

    Answer: a) 30 square units

32. What is the perimeter of a triangle with sides of length 6, 8, and 10 units?
    a) 20 units
    b) 24 units
    c) 22 units
    d) 18 units
    Answer: b) 24 units

33. What is the area of a circle with a radius of 7 units? (Use $\pi \approx 3.14$)
    a) 153.86 square units
    b) 148.37 square units
    c) 125.44 square units
    d) 154 square units
    Answer: a) 153.86 square units

34. If a car travels 60 miles per hour, how long will it take to travel 180 miles?
    a) 3 hours
    b) 2 hours
    c) 4 hours
    d) 5 hours
    Answer: a) 3 hours

35. What is the value of 75% of 240?
    a) 150
    b) 160
    c) 180
    d) 200
    Answer: a) 180