



Class 9 Mathematics | The World Of Algorithms

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. An algorithm is best described as:

- A. a finite sequence of clear steps
- B. an untested guess only
- C. a drawing with no rules
- D. an answer without a method

2. In column addition, $8+7+1$ gives digit and carry:

- A. digit 6, carry 1
- B. digit 5, carry 1
- C. digit 6, carry 0
- D. digit 1, carry 6

3. The first division step for finding gcd(84, 30) is:

- A. $84=30+44$
- B. $84=2 \times 30+24$
- C. $84=3 \times 30+6$
- D. $84=2 \times 30+14$

4. Using the division algorithm, gcd(84, 30) equals:

- A. 6
- B. 3
- C. 12
- D. 24

5. Which list contains all positive divisors of 18?

- A. 1,2,3,6,9,18
- B. 1,3,5,9,18
- C. 1,2,3,6,18
- D. 2,3,6,9

6. A divisor-testing algorithm checks d. It records d when:

- A. $n+d$ is even
- B. d is always odd
- C. d is larger than n
- D. the remainder of n divided by d is zero

7. To test whether 29 is prime, it is sufficient to test prime divisors:

- A. 2,3,5,7,11,13
- B. 2,3,5
- C. 2 only
- D. every integer up to 29

8. Repeatedly subtract the smaller from the larger, starting with 35 and 21. First new pair is:

- A. (35,14)
- B. (21,21)
- C. (56,21)
- D. (14,21)

9. The gcd of 35 and 21 is:

- A. 5
- B. 7
- C. 14
- D. 3

10. Which prime factorisation is correct?

- A. $60=2 \times 3 \times 5$
- B. $60=2^3 \times 5$
- C. $60=2^2 \times 3^2$
- D. $60=2^2 \times 3 \times 5$

11. A loop starts $s=0$ and adds 1,2,3,4 to s. Final s is:

- A. 4
- B. 9
- C. 24
- D. 10

12. An algorithm doubles x then adds 3. For $x=5$ its output is:

- A. 13
- B. 16
- C. 8
- D. 10

13. A divisor list is built by testing integers from 1 to 12 in order. After testing 5, the list is:

- A. 1,2,3,4,5
- B. 2,3,4,5
- C. 1,2,3,4
- D. 1,2,4,6

14. A prime-testing procedure must treat 1 as:

- A. not prime
- B. even prime
- C. the largest prime
- D. prime

15. In Euclid's division algorithm, if the remainder becomes zero, the gcd is the:

- A. sum of remainders
- B. last non-zero divisor
- C. initial quotient
- D. initial dividend

ANSWER KEY — check after completing all 15 questions

1.A 2.A 3.B 4.A 5.A 6.D 7.B 8.D 9.B 10.D 11.D 12.A 13.C 14.A 15.B