



Class 9 Mathematics | Orienting Yourself: The Use Of Coordinates

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

1. Which quadrant contains $(-4, 7)$?

A. IV B. II C. III D. I

2. The point $(0, -6)$ lies on the:

A. positive y-axis B. negative x-axis
C. positive x-axis D. negative y-axis

3. The distance between $(2, 3)$ and $(2, -5)$ is:

A. 2 B. 10 C. 8 D. 6

4. Find the distance between $(1, 2)$ and $(4, 6)$.

A. 5 B. 7 C. $\sqrt{7}$ D. 25

5. The midpoint of $(-2, 5)$ and $(6, -1)$ is:

A. $(2, 3)$ B. $(4, 4)$ C. $(-4, 3)$ D. $(2, 2)$

6. Reflection of $(3, -4)$ in the x-axis is:

A. $(-3, -4)$ B. $(3, 4)$ C. $(-3, 4)$ D. $(4, 3)$

7. A robot at $(-1, 2)$ moves 4 units east and 3 south. Its position is:

A. $(3, -1)$ B. $(-5, 5)$ C. $(3, 5)$ D. $(-4, 6)$

8. The distance of $(-5, 12)$ from the origin is:

A. 17 B. 7 C. 13 D. $\sqrt{119}$

9. Which point is equally distant from $(-4, 0)$ and $(4, 0)$?

A. $(0, 3)$ B. $(2, 0)$ C. $(-2, 3)$ D. $(4, 3)$

10. $A(1, 1)$, $B(1, 5)$, $C(4, 5)$ form a triangle right-angled at:

A. A B. B C. none of these D. C

11. If $(3, 2)$ is the midpoint of $(1, -2)$ and (x, y) , find (x, y) .

A. $(4, 0)$ B. $(2, 4)$ C. $(6, 4)$ D. $(5, 6)$

12. Which point lies on the line through $(0, 0)$ and $(2, 4)$?

A. $(1, 4)$ B. $(3, 6)$ C. $(2, 3)$ D. $(4, 3)$

13. The vertices $(0, 0)$, $(5, 0)$, $(5, 3)$, $(0, 3)$ enclose an area of:

A. 30 square units B. 8 square units
C. 15 square units D. 16 square units

14. A circle has diameter endpoints $(-3, 2)$ and $(5, 2)$. Its centre is:

A. $(1, 2)$ B. $(2, 1)$ C. $(4, 2)$ D. $(-1, 2)$

15. For which k is the distance between $(k, 0)$ and $(0, 0)$ equal to 6?

A. $k=36$ B. $k=6$ or -6
C. $k=-6$ only D. $k=6$ only

ANSWER KEY — check after completing all 15 questions

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



Class 9 Mathematics | Introduction To Linear Polynomials

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

1. Which expression is a linear polynomial in x ?

A. x^2+1 B. $5-2x$ C. $\sqrt{x}+3$ D. $1/x+2$

2. The coefficient of x in $7-3x$ is:

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

3. If $p(x)=4x-7$, then $p(3)$ is:

A. 19 B. 5 C. -5 D. 12

4. The zero of $5x+15$ is:

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

5. A taxi charges ₹40 fixed plus ₹12 per km. Cost for x km is:

A. $12x-40$ B. $40+12x$ C. $52x$ D. $40x+12$

6. In $y=-3x+8$, the slope is:

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

7. The y-intercept of $y=2x-5$ is:

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

8. Water starts at 90 L and drains at 6 L/min. Volume after t minutes is:

A. $84t$ B. $90-6t$ C. $90+6t$ D. $6t-90$

9. For $y=3x+2$, increasing x by 4 increases y by:

A. 6 B. 12 C. 4 D. 14

10. A line has slope 4 and y-intercept 1. Its equation is:

A. $y=4x-1$ B. $y=5x$ C. $y=4x+1$ D. $y=x+4$

11. Which input makes $7-2x$ equal to -1?

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

12. The expression $(3x+2)+(5-x)$ simplifies to:

A. $4x+7$ B. $2x-3$ C. $2x+7$ D. $4x-3$

13. If $p(2)=11$ for $p(x)=ax+3$, then a is:

A. 4 B. 8 C. 7 D. 5

14. A linear pattern has values 5, 8, 11 at $x=1, 2, 3$. Its rule is:

A. $y=2x+3$ B. $y=5x-2$ C. $y=3x+2$ D. $y=3x+5$

15. For what k does $(k-2)x+5$ have degree zero?

A. 0 B. 5 C. -2 D. 2

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

Plot No. 15, Second Floor, Jaisingh Chowk, Sector 85, Gurgaon - 122004

8800 8800 28 | www.goodmarksclasses.com



Class 9 Mathematics | The World Of Numbers

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

1. Which number is irrational?

A. $\sqrt{49}$ B. $-\frac{3}{5}$ C. 0.125 D. $\sqrt{7}$

2. The decimal 0.272727... equals:

A. $\frac{3}{11}$ B. $\frac{11}{3}$ C. $\frac{27}{100}$ D. $\frac{27}{10}$

3. A rational number between $\frac{2}{5}$ and $\frac{3}{5}$ is:

A. $\frac{1}{5}$ B. $\frac{4}{5}$ C. $\frac{7}{10}$ D. $\frac{1}{2}$

4. Between any two distinct rational numbers there are:

- A. exactly ten rational numbers
- B. no rational numbers
- C. exactly one rational number
- D. infinitely many rational numbers

5. Which fraction has a terminating decimal expansion?

A. $\frac{2}{7}$ B. $\frac{4}{15}$ C. $\frac{5}{6}$ D. $\frac{7}{40}$

6. The sum $4+\sqrt{3}$ is:

- A. an integer
- B. rational
- C. irrational
- D. a natural number

7. The product $\sqrt{5}\times\sqrt{5}$ is:

A. 25 B. 5 C. 10 D. $\sqrt{10}$

8. The number 0.101001000100001... is:

- A. a repeating decimal
- B. irrational
- C. an integer
- D. terminating

9. Which is the smallest number?

A. 0 B. -1.5 C. -2 D. $-\sqrt{5}$

10. The value of $\sqrt{50}-\sqrt{8}$ is:

A. $3\sqrt{2}$ B. $7\sqrt{2}$ C. $2\sqrt{3}$ D. $\sqrt{42}$

11. The rationalised form of $\frac{1}{\sqrt{3}}$ is:

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

12. If a is rational and b irrational, which is always irrational?

A. $a+b$ B. $\frac{b}{b}$ C. $a-a$ D. ab

13. The number $\sqrt{2}$ lies between:

- A. 1.2 and 1.3
- B. 2 and 3
- C. 1.4 and 1.5
- D. 1.5 and 1.6

14. In a square-root spiral, a right triangle has legs $\sqrt{8}$ and 1. Its hypotenuse is:

A. $\sqrt{10}$ B. $\sqrt{7}$ C. 3 D. 9

15. If $\sqrt{2}=\frac{p}{q}$ in lowest terms, the standard contradiction shows:

- A. $p=0$
- B. p and q are both even
- C. p and q are both odd
- D. $q=1$

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

Plot No. 15, Second Floor, Jaisingh Chowk, Sector 85, Gurgaon - 122004

8800 8800 28 | www.goodmarksclasses.com



Class 9 Mathematics | Exploring Algebraic Identities

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

1. Expand $(x+4)^2$.

- A. $x^2+8x+16$ B. x^2+16
C. $x^2-8x+16$ D. $x^2+4x+16$

2. Factorise x^2-49 .

- A. $(x-49)(x+1)$ B. $(x+7)^2$
C. $(x-7)(x+7)$ D. $(x-7)^2$

3. The value of 103^2-97^2 is:

- A. 1200 B. 600 C. 2000 D. 36

4. Which term completes $x^2+10x+ \underline{\hspace{1cm}}$ as a perfect square?

- A. 100 B. 10 C. 25 D. 5

5. If $a+b=9$ and $ab=14$, then a^2+b^2 is:

- A. 109 B. 53 C. 67 D. 81

6. The factorisation of $x^2+7x+12$ is:

- A. $(x+1)(x+12)$ B. $(x+2)(x+6)$
C. $(x-3)(x-4)$ D. $(x+3)(x+4)$

7. For $x \neq 3$, $(x^2-9)/(x-3)$ equals:

- A. x^2+3 B. $x+3$ C. $x-3$ D. 1

8. Expand $(2x-3y)^2$.

- A. $4x^2-12xy+9y^2$ B. $4x^2+9y^2$
C. $2x^2-12xy+3y^2$ D. $4x^2-6xy+9y^2$

9. If $x-y=5$ and $xy=6$, then $(x+y)^2$ is:

- A. 49 B. 31 C. 25 D. 1

10. Factorise $4x^2-25y^2$.

- A. $(4x-25y)(x+y)$ B. $(4x-5y)(x+5y)$
C. $(2x-5y)^2$ D. $(2x-5y)(2x+5y)$

11. The value of 99×101 is:

- A. 9999 B. 10001 C. 10201 D. 9801

12. Which expression equals $(a+b)^2-(a-b)^2$?

- A. $4a^2$ B. $2a^2+2b^2$ C. $2ab$ D. $4ab$

13. A square of side $x+2$ has area exceeding x^2 by:

- A. $4x$ B. $2x+4$ C. $4x+4$ D. 4

14. For $x \neq -2$, $(x^2+5x+6)/(x+2)$ equals:

- A. $x+3$ B. $x+6$ C. $x+2$ D. $x-3$

15. If $a+b+c=0$, then $a^3+b^3+c^3$ equals:

- A. $3abc$ B. 0 C. abc D. $-3abc$

ANSWER KEY — check after completing all 15 questions

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



Class 9 Mathematics | I'M Up And Down, And Round And Round

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

1. The longest chord of a circle is its:

- A. tangent B. diameter C. minor arc D. radius

2. A chord 16 cm long is 6 cm from the centre. The radius is:

- A. 14 cm B. 20 cm C. 8 cm D. 10 cm

3. In the same circle, equal chords are:

- A. always perpendicular
B. equidistant from the centre
C. always diameters
D. unequal in central angle

4. The angle subtended by a diameter at a point on the circle is:

- A. 180° B. 90° C. 45° D. 60°

5. An arc subtends 110° at the centre. At a point on the remaining arc it subtends:

- A. 110° B. 55° C. 35° D. 220°

6. Two angles standing on the same chord in the same segment are:

- A. always right angles B. equal
C. complementary D. supplementary

7. One angle of a cyclic quadrilateral is 72° . Its opposite angle is:

- A. 18° B. 108° C. 144° D. 72°

8. How many circles pass through three non-collinear points?

- A. None B. Two C. One D. Infinitely many

9. The circumcentre of a right triangle is at the:

- A. midpoint of a leg
B. midpoint of its hypotenuse
C. right-angle vertex
D. centroid

10. A perpendicular from the centre meets chord AB at M. If $AM=7$ cm, AB is:

- A. 21 cm B. 14 cm C. 3.5 cm D. 7 cm

11. In one circle, chord AB is longer than CD. Which is closer to the centre?

- A. AB
B. Cannot be determined
C. Both equally close
D. CD

12. The exterior angle at one vertex of a cyclic quadrilateral equals the:

- A. interior adjacent angle
B. sum of opposite angles
C. central angle
D. interior opposite angle

13. In a circle of radius 13 cm, a chord is 5 cm from centre. Its length is:

- A. 24 cm B. 18 cm C. 12 cm D. 26 cm

14. An inscribed angle is 38° . The same arc subtends at the centre:

- A. 38° B. 142° C. 76° D. 19°

15. Angles A and C of quadrilateral ABCD are 95° and 85° . What follows?

- A. ABCD is a rhombus
B. ABCD is a square
C. ABCD is cyclic
D. ABCD cannot be cyclic

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper



Class 9 Mathematics | Measuring Space: Perimeter And Area

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

1. A rectangle is 12 cm by 5 cm. Its perimeter is:

A. 34 cm B. 17 cm C. 60 cm D. 24 cm

2. A triangle of sides 13, 14, 15 cm has semiperimeter:

A. 21 cm B. 42 cm C. 7 cm D. 28 cm

3. The area of a triangle with sides 5, 12, 13 cm is:

A. 60 cm² B. 30 cm² C. 15 cm² D. 65 cm²

4. A parallelogram has base 9 cm and corresponding height 4 cm. Area is:

A. 13 cm² B. 36 cm² C. 18 cm² D. 26 cm²

5. A circle of radius 7 cm has circumference ($\pi=22/7$):

A. 44 cm B. 22 cm C. 154 cm D. 88 cm

6. A 60° arc in a circle of radius 9 cm has length:

A. 9π cm B. 18π cm C. 6π cm D. 3π cm

7. A 90° sector of radius 8 cm has area:

A. 16π cm² B. 32π cm² C. 64π cm² D. 8π cm²

8. A median divides a triangle of area 42 cm² into triangles each of area:

A. 28 cm² B. 42 cm² C. 21 cm² D. 14 cm²

9. A triangle of sides 7, 8, 9 cm has area:

A. 36 cm² B. $6\sqrt{5}$ cm² C. $12\sqrt{5}$ cm² D. 24 cm²

10. The ratio circumference/diameter for every circle is:

A. $1/\pi$ B. π C. 2π D. π^2

11. A cyclic quadrilateral has all four sides 5 cm. Its area is:

A. 25 cm² B. 20 cm² C. 50 cm² D. 10 cm²

12. A cyclic quadrilateral has sides 3, 4, 3, 4 cm. Its area is:

A. 24 cm² B. 12 cm² C. 14 cm² D. 7 cm²

13. A square and a rectangle 16 cm by 9 cm have equal areas. The square side is:

A. 7 cm B. 18 cm C. 12 cm D. 25 cm

14. If a circle's radius is doubled, its area becomes:

A. 4 times B. unchanged C. 2 times D. 8 times

15. A semicircle of radius r has total boundary length:

A. $\pi r + 2r$ B. $2\pi r$ C. πr D. πr^2

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

Plot No. 15, Second Floor, Jaisingh Chowk, Sector 85, Gurgaon - 122004

8800 8800 28 | www.goodmarksclasses.com



Class 9 Mathematics | The Mathematics Of Maybe: Introduction To Probability

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

1. The probability of an impossible event is:

A. 0 B. -1 C. $1/2$ D. 1

2. Which value cannot represent a probability?

A. 0.8 B. 1 C. 1.2 D. 0

3. A fair die is rolled. P(number greater than 4) is:

A. $1/2$ B. $1/6$ C. $2/3$ D. $1/3$

4. A fair coin is tossed twice. P(exactly one head) is:

A. 1 B. $3/4$ C. $1/4$ D. $1/2$

5. A bag has 3 red and 5 blue balls. P(red) is:

A. $5/8$ B. $3/8$ C. $3/5$ D. $1/3$

6. If $P(E)=0.35$, then $P(\text{not } E)$ is:

A. 1.35 B. 0.75 C. 0.35 D. 0.65

7. In 80 trials, a spinner lands on green 28 times. Empirical P(green) is:

A. $2/7$ B. $7/10$ C. $13/20$ D. $7/20$

8. A fair die is rolled. Which event is certain?

- A. Number is 6
- B. Number is even
- C. Number is prime
- D. Number is less than 7

9. A letter is chosen uniformly from the letters of MATHS. P(vowel) is:

A. $3/5$ B. $1/5$ C. $2/5$ D. $1/2$

10. An integer is selected uniformly from 1 to 10. P(multiple of 3) is:

A. $3/10$ B. $1/5$ C. $2/5$ D. $1/3$

11. One coin and one die are used. Number of equally likely combined outcomes is:

A. 2 B. 6 C. 8 D. 12

12. Two fair coins are tossed. P(at least one head) is:

A. $3/4$ B. $1/4$ C. $1/2$ D. 1

13. A bag contains only 6 black balls. P(drawing a white ball) is:

A. 0 B. 1 C. $5/6$ D. $1/6$

14. A die shows 6 in 19 of 120 trials. Which is its empirical probability of 6?

A. $101/120$ B. $19/120$ C. $6/19$ D. $1/6$

15. A spinner has 8 equal sectors, 3 yellow and 5 blue. P(not yellow) is:

A. $3/5$ B. $5/8$ C. $3/8$ D. $1/8$

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper



Class 9 Mathematics | Predicting What Comes Next: Exploring Sequences And Progressions

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

1. The next term of 4, 9, 14, 19, ... is:

A. 23 B. 24 C. 29 D. 25

2. The common difference of 12, 8, 4, 0, ... is:

A. -4 B. 4 C. -8 D. 0

3. The 10th term of the AP 3, 7, 11, ... is:

A. 36 B. 39 C. 43 D. 40

4. For $a_n = 2n + 1$, the fifth term is:

A. 13 B. 11 C. 10 D. 9

5. The next term of 2, 6, 18, 54, ... is:

A. 216 B. 108 C. 162 D. 72

6. The common ratio of 81, 27, 9, 3, ... is:

A. 3 B. $1/9$ C. -54 D. $1/3$

7. The sixth term of GP 5, 10, 20, ... is:

A. 160 B. 320 C. 80 D. 60

8. A sequence starts at 2 and each next term is twice the previous plus 1. Its third term is:

A. 11 B. 9 C. 7 D. 13

9. The sum $1 + 2 + \dots + 20$ is:

A. 190 B. 210 C. 420 D. 200

10. Which sequence is an AP?

A. 2, 4, 8, 16

B. 7, 11, 15, 19

C. 1, 4, 9, 16

D. $1, 1/2, 1/4, 1/8$

11. Which sequence is a GP?

A. 3, 6, 9, 12

B. 1, 4, 7, 10

C. 2, 5, 10, 17

D. 3, 6, 12, 24

12. A theatre row has 18 seats; each next row has 2 more. Row 12 has:

A. 36 seats B. 42 seats C. 38 seats D. 40 seats

13. A culture doubles each hour from 7 cells. After 4 hours it has:

A. 112 cells B. 56 cells C. 224 cells D. 28 cells

14. Minimum moves for a Tower of Hanoi with 4 discs are:

A. 15 B. 16 C. 7 D. 8

15. A fractal retains $2/3$ of its area each step. Starting from 81 cm^2 , after 3 steps area is:

A. 24 cm^2 B. 54 cm^2 C. 18 cm^2 D. 36 cm^2

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

Plot No. 15, Second Floor, Jaisingh Chowk, Sector 85, Gurgaon - 122004

8800 8800 28 | www.goodmarksclasses.com



Class 9 Mathematics | Propositions And Their Converses

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

1. Which sentence is a proposition?

- A. What is your name? B. Please sit down.
C. 7 is a prime number. D. Draw a circle.

2. The converse of 'If n is divisible by 8, then n is even' is:

- A. If n is odd, then n is divisible by 8.
B. If n is even, then n is divisible by 8.
C. Every odd number is prime.
D. If n is divisible by 8, then n is odd.

3. Which number disproves 'Every even positive integer is divisible by 4'?

- A. 12 B. 8 C. 6 D. 16

4. If a triangle is equilateral, it is isosceles. The converse is:

- A. always true
B. not a statement
C. a definition of a circle
D. false

5. A single counterexample is enough to:

- A. prove every statement
B. prove an unrelated theorem
C. disprove a universal statement
D. prove its converse

6. Which implication and its converse are both true for integers?

- A. n is divisible by 6 if and only if n is even.
B. n is prime if and only if n is odd.
C. n is positive if and only if n^2 is positive.
D. n is even if and only if n^2 is even.

7. Which disproves 'All prime numbers are odd'?

- A. 2 B. 21 C. 15 D. 9

8. The statement 'If a quadrilateral is a square, it is a rectangle' is:

- A. true, but its converse is false
B. false, but its converse is true
C. false with a false converse
D. true with a true converse

9. If two sides of a triangle are equal, the opposite angles are:

- A. always 90° B. always 60°
C. equal D. supplementary

10. Which pair disproves the converse of "If $x=y$, then $x^2=y^2$ "?

- A. $x=1, y=2$ B. $x=3, y=3$
C. $x=0, y=0$ D. $x=3, y=-3$

11. For real x, y , which implication and converse are both true?

- A. $x=2$ and $x^2=4$ B. $x>0$ and $x^2>0$
C. $x=y$ and $x^2=y^2$ D. $x=y$ and $x^3=y^3$

12. Which positive integer has an odd number of positive divisors?

- A. 36 B. 24 C. 30 D. 18

13. Which is the converse of the isosceles triangle theorem?

- A. Equal angles have equal opposite sides.
B. Equal sides have equal opposite angles.
C. Every triangle has two equal sides.
D. All angles of a triangle are equal.

14. If a triangle has sides 6, 8, 10, the converse of Pythagoras proves it is:

- A. acute-angled B. obtuse-angled
C. equilateral D. right-angled

15. For positive integers, 'divisible by 12' implies 'divisible by 3'. Which disproves the converse?

- A. 36 B. 24 C. 12 D. 9

ANSWER KEY — check after completing all 15 questions

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



Class 9 Mathematics | How Quantities Combine: Understanding Data

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

1. The mean of 4, 6, 8 and 10 is:

A. 28 B. 7 C. 6 D. 8

2. A group of 10 students has mean score 60; 20 others have mean 75. Combined mean is:

A. 67.5 B. 70 C. 72 D. 65

3. A student scores 80 in a test weighted 40% and 60 in one weighted 60%. Weighted score is:

A. 64 B. 68 C. 72 D. 70

4. Mix 2 kg rice at ₹40/kg and 3 kg at ₹60/kg. Mean cost per kg is:

A. ₹50 B. ₹52 C. ₹54 D. ₹48

5. Two classes of equal size have means 54 and 66. Their combined mean is:

A. 63 B. 57 C. 60 D. 120

6. A 200 g solution is 10% salt. Salt mass is:

A. 20 g B. 2 g C. 10 g D. 40 g

7. Mix 100 g of 20% salt solution with 300 g of 10% solution. Salt percentage is:

A. 12.5% B. 15% C. 17.5% D. 30%

8. Add 100 g pure water to 100 g of a 20% salt solution. New concentration is:

A. 10% B. 40% C. 5% D. 20%

9. A mean of 12 observations is 15. Their total is:

A. 3 B. 180 C. 27 D. 150

10. Five values have mean 8. A sixth value 14 is added. New mean is:

A. 11 B. 8 C. 10 D. 9

11. Positive-weight average of 30 and 50 must lie:

A. above 50 B. between 30 and 50
C. below 30 D. always at 40

12. A class has 12 girls averaging 70 and 8 boys averaging 60. Class mean is:

A. 68 B. 64 C. 65 D. 66

13. Two groups have means 10 and 20. Combined mean 18 implies the larger group is:

A. the group with mean 20
B. the group with mean 10
C. impossible to determine
D. both equal in size

14. A stacked bar shows 18 walkers, 12 cyclists and 20 bus users. Total students are:

A. 38 B. 32 C. 30 D. 50

15. In a 100% stacked bar, a segment occupies one quarter of the bar. It represents:

A. 75% B. 20% C. 25% D. 40%

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

Plot No. 15, Second Floor, Jaisingh Chowk, Sector 85, Gurgaon - 122004

8800 8800 28 | www.goodmarksclasses.com



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



Class 9 Mathematics | Quadrilaterals

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

1. The sum of interior angles of a quadrilateral is:

- A. 540° B. 180° C. 270° D. 360°

2. Three angles of a quadrilateral are 75° , 85° , 110° . The fourth is:

- A. 90° B. 100° C. 110° D. 80°

3. Opposite sides of a parallelogram are:

- A. always curved
B. equal and parallel
C. always unequal
D. equal and perpendicular

4. One angle of a parallelogram is 65° . An adjacent angle is:

- A. 25° B. 65° C. 125° D. 115°

5. Diagonals of a parallelogram:

- A. are always perpendicular
B. bisect every angle
C. bisect each other
D. are always equal

6. A parallelogram has equal diagonals. It must be a:

- A. triangle B. non-square rhombus
C. rectangle D. kite only

7. A parallelogram has perpendicular diagonals. It must be a:

- A. rhombus
B. trapezium with unequal legs
C. triangle
D. rectangle only

8. Which shape always has equal perpendicular diagonals?

- A. Rhombus B. Square
C. Parallelogram D. Rectangle

9. In parallelogram ABCD, diagonals meet at O. If $AC=18$ cm, AO is:

- A. 6 cm B. 36 cm C. 18 cm D. 9 cm

10. The line joining midpoints of two sides of a triangle is:

- A. equal to its third side
B. parallel to its third side
C. perpendicular to its third side
D. a diagonal of the triangle

11. In triangle ABC, D and E are midpoints of AB and AC. If $BC=14$ cm, DE is:

- A. 3.5 cm B. 7 cm C. 28 cm D. 14 cm

12. A quadrilateral has both pairs of opposite sides equal. It is a:

- A. cyclic quadrilateral necessarily
B. parallelogram
C. trapezium only
D. kite only

13. Each angle of a rectangle is:

- A. 180° B. 60° C. 120° D. 90°

14. A rhombus has side 8 cm. Its perimeter is:

- A. 64 cm B. 16 cm C. 32 cm D. 24 cm

15. A diagonal divides a parallelogram into two triangles that are:

- A. always right-angled B. always equilateral
C. congruent D. unequal in area

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper



Class 9 Mathematics | Two Variables, One Line

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

1. Which is a linear equation in two variables?

- A. $2x+3y=7$ B. $1/x+y=7$ C. $x^2+y=7$ D. $xy=7$

2. Which pair satisfies $2x+y=9$?

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

3. The lines $x+y=8$ and $x-y=2$ intersect at:

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

4. The graph of $x=4$ is:

- A. the x-axis B. parallel to x-axis
C. a circle D. parallel to y-axis

5. The graph of $y=-3$ is:

- A. the y-axis B. a curve
C. parallel to x-axis D. parallel to y-axis

6. The x-intercept of $3x+2y=12$ is:

- A. 3 B. 4 C. 6 D. 12

7. The y-intercept of $3x+2y=12$ is:

- A. 2 B. 6 C. 12 D. 4

8. How many real solutions does $x+2y=8$ have?

- A. Infinitely many B. Two C. One D. None

9. Which equation represents a line through the origin?

- A. $x+y=5$ B. $2x-3y=0$ C. $2x-3y=6$ D. $y=4$

10. The equations $x+2y=6$ and $2x+4y=12$ have:

- A. exactly two solutions
B. no solution
C. infinitely many solutions
D. one solution

11. A notebook costs x rupees and a pen y rupees. Two notebooks and three pens cost ₹90. Equation is:

- A. $2x+3y=90$ B. $3x+2y=90$
C. $x+y=90$ D. $5xy=90$

12. The lines $y=2x+1$ and $y=2x-3$ are:

- A. parallel and distinct B. coincident
C. intersecting at origin D. perpendicular

13. The line through (0,5) and (5,0) has equation:

- A. $2x+y=5$ B. $x-y=5$ C. $x+y=5$ D. $x+y=0$

14. Two pencils and a pen cost ₹19; one pencil and a pen cost ₹12. A pencil costs:

- A. ₹12 B. ₹6 C. ₹7 D. ₹5

15. A line passes through (0,2) and has slope -1. Its equation is:

- A. $y=x+2$ B. $y=2-x$ C. $y=x-2$ D. $y=-2x$

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper



Class 9 Mathematics | Math Of Space: Surface Area And Volume

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

1. A cube of side 4 cm has total surface area:

A. 16 cm^2 B. 48 cm^2 C. 64 cm^2 D. 96 cm^2

2. The volume of a cuboid 6 cm $\times$ 4 cm $\times$ 3 cm is:

A. 36 cm^3 B. 144 cm^3 C. 72 cm^3 D. 26 cm^3

3. The total surface area of a cuboid 5 cm $\times$ 3 cm $\times$ 2 cm is:

A. 60 cm^2 B. 30 cm^2 C. 62 cm^2 D. 31 cm^2

4. A cylinder of radius 3 cm and height 7 cm has curved area:

A. $42\pi \text{ cm}^2$ B. $63\pi \text{ cm}^2$ C. $60\pi \text{ cm}^2$ D. $21\pi \text{ cm}^2$

5. Volume of a cylinder of radius 2 cm and height 9 cm is:

A. $36\pi \text{ cm}^3$ B. $18\pi \text{ cm}^3$ C. $12\pi \text{ cm}^3$ D. $72\pi \text{ cm}^3$

6. A cone has radius 5 cm and height 12 cm. Slant height is:

A. 10 cm B. 17 cm C. 13 cm D. 7 cm

7. Curved surface area of a cone of radius 4 cm and slant height 9 cm is:

A. $48\pi \text{ cm}^2$ B. $72\pi \text{ cm}^2$ C. $36\pi \text{ cm}^2$ D. $16\pi \text{ cm}^2$

8. Volume of a cone of radius 3 cm and height 8 cm is:

A. $24\pi \text{ cm}^3$ B. $72\pi \text{ cm}^3$ C. $8\pi \text{ cm}^3$ D. $36\pi \text{ cm}^3$

9. Surface area of a sphere of radius 5 cm is:

A. $125\pi \text{ cm}^2$ B. $100\pi \text{ cm}^2$
C. $50\pi \text{ cm}^2$ D. $25\pi \text{ cm}^2$

10. Volume of a sphere of radius 3 cm is:

A. $27\pi \text{ cm}^3$ B. $12\pi \text{ cm}^3$ C. $36\pi \text{ cm}^3$ D. $108\pi \text{ cm}^3$

11. Total surface area of a hemisphere of radius r is:

A. $4\pi r^2$ B. πr^2 C. $3\pi r^2$ D. $2\pi r^2$

12. If every edge of a cube is doubled, volume becomes:

A. 2 times B. 4 times C. 8 times D. 6 times

13. 1 litre equals:

A. 100 cm^3 B. 10 cm^3
C. 10000 cm^3 D. 1000 cm^3

14. A cube has volume 125 cm^3 . Its edge is:

A. 5 cm B. $\sqrt{125} \text{ cm}$ C. 25 cm D. 15 cm

15. A cylinder and cone have the same base and height. Volume ratio cylinder:cone is:

A. 2:1 B. 1:3 C. 1:1 D. 3:1

ANSWER KEY — check after completing all 15 questions

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

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

Plot No. 15, Second Floor, Jaisingh Chowk, Sector 85, Gurgaon - 122004

8800 8800 28 | www.goodmarksclasses.com