

Grade – 9 Maths
Multan Board
2018
Group 1

MCQs

(1). _____ ordered pairs satisfy the equation $y = 2x$:-

(A). (1, 2)

(B). (2, 1)

(C). (2, 2)

(D). (0, 1)

Answer:

A.

(2). Midpoint of the points (-2, 2) and (2, -2) is:-

(A). (0, 0)

(B). (-2, -2)

(C). (2, 2)

(D). (1, 1)

Answer:

A.

(3). The ray has endpoints:-

(A). Two

(B). Three

(C). Four

(D). One

Answer:

A.

(4). In a parallelogram ___ are congruent:-

- (A). Opposite sides**
- (B). Opposite angles**
- (C). Both A and B**
- (D). Diagonals**

Answer:

A.

(5). The bisector of the angle of a triangle are:-

- (A). Congruent**
- (B). Parallel**
- (C). Concurrent**
- (D). Perpendicular**

Answer:

C.

(6). One and only one lines can be drawn through ___ points:-

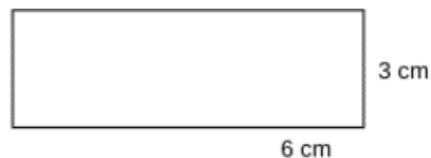
- (A). Two**
- (B). Three**
- (C). One**
- (D). Four**

Answer:

A.

(7). Area of a given figure is :-

- (A). 36 cm^2**
- (B). 18 cm^2**
- (C). 36 cm**
- (D). 18 cm**



Answer:

B.

(8). If three altitudes of a triangle are congruent then the triangle is:-

- (A). Isosceles**
- (B). Equilateral**
- (C). Right angled**
- (D). Acute angled**

Answer:

B.

(9). Product of $\begin{bmatrix} x & y \end{bmatrix} \begin{bmatrix} 2 \\ -1 \end{bmatrix}$ is equal to:-

- (A). $[2x + y]$**
- (B). $[x - 2y]$**
- (C). $[2x - y]$**
- (D). $[x + 2y]$**

Answer:

C.

(10). The value of i^9 :-

- (A). i**
- (B). -1**
- (C). $-i$**
- (D). 1**

Answer:

A.

(11). Log_y^x will be equal to:-

(A). $\frac{\text{Log}_z^x}{\text{Log}_y^z}$

(B). $\frac{\text{Log}_x^z}{\text{Log}_y^z}$

(C). $\frac{\text{Log}_z^x}{\text{Log}_z^y}$

(D). $\frac{\text{Log}_z^y}{\text{Log}_z^x}$

Answer:

C.

(12). The degree of polynomial $4x^4 + 2x^2y$:-

(A). 1

(B). 2

(C). 3

(D). 4

Answer:

D.

(13). ___ will be added to complete the square of $9a^2 + 12ab$:-

(A). $16b^2$

(B). $-16b^2$

(C). $4b^2$

(D). $-4b^2$

Answer:

C.

(14). The square root of $x^4 + \frac{1}{x^4} + 2 = :-$

(A) $\pm \left(x + \frac{1}{x} \right)$

(B) $\pm \left(x^2 + \frac{1}{x^2} \right)$

(C) $\pm \left(x - \frac{1}{x} \right)$

(D) $\pm \left(x^2 - \frac{1}{x^2} \right)$

Answer:

B.

(15). $X = 0$ is a solution of the inequality:-

(A). $x > 0$

(B). $3x + 5 < 0$

(C). $x + 2 < 0$

(D). $x - 2 < 0$

Answer:

D.

Q.2 i) Define Square Matrix with example. (Marks 2)

Q.2 ii) If $\begin{bmatrix} a+3 & 4 \\ 6 & b-1 \end{bmatrix} = \begin{bmatrix} -3 & 4 \\ 6 & 2 \end{bmatrix}$ then find a and b. (Marks 2)

Q.2 iii) Use laws of exponents to simplify. $\left[\frac{x^{-2}y^{-1}z^{-4}}{x^4y^{-3}z^0} \right]^{-3}$

(Marks 2)

Q.2 iv) Express $\frac{9 - 7i}{3 + i}$ in standard form of $a + bi$.

(Marks 2)

Q.2 v) Express 6×10^{-4} in ordinary notation. (Marks 2)

Q.2 vi) Find the value of 'x' if $\log_2 x = 5$ (Marks 2)

Q.2 vii) Define Rational Expression. (Marks 2)

Q.2 viii) Simplify $\frac{\sqrt{21}\sqrt{9}}{\sqrt{63}}$. (Marks 2)

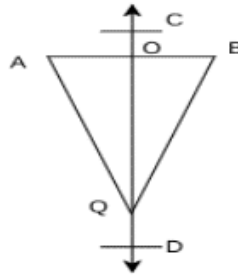
Q.2 ix) Factorize $144a^2 + 24a + 1$. (Marks 2)

- Q.3 i) Find H.C.F.**
 $102xy^2z, 85x^2yz, 187xyz^2$ (Marks 2)
- Q.3 ii) Define a Linear equation in one variable.** (Marks 2)
- Q.3 iii) Solve $\frac{1}{2}[3x + 2] - 4 = 11$.** (Marks 2)
- Q.3 iv) Draw (-6, 4) on graph paper.** (Marks 2)
- Q.3 v) Define Origin.** (Marks 2)
- Q.3 vi) Find the distance between pairs of points,**
A(9, 2), B(7, 2) (Marks 2)
- Q.3 vii) Find the midpoint of the line segment joining pairs**
of points. A(3, -11), B(3, -4) (Marks 2)
- Q.3 viii) For triangles, what is meant by S.S.S = S.S.S?**
(Marks 2)
- Q.3 ix) One angle of a parallelogram is 130° . Find the**
measures of its remaining angles. (Marks 2)

Q.4 i) If \overline{CD} is the right bisector of the line segment \overline{AB} then

(i) $m\overline{OA} =$ _____

(ii) $m\overline{AQ} =$ _____



(Marks 2)

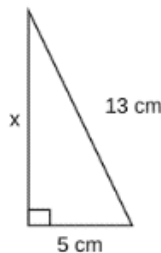
Q.4 ii) If 10cm, 6cm, and 8cm are the length of triangle then verify that sum of measure of two sides of a triangle than third side. (Marks 2)

Q.4 iii) Define Proportion. (Marks 2)

Q.4 iv) Verify that triangle having measure of sides are sides of right angle triangle.

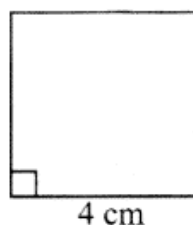
$a = 3\text{cm}, b = 4\text{cm}, 5 = \text{cm}$ (Marks 2)

Q.4 v) Find the value of x in the figure. (Marks 2)



Q.4 vi) What is meant by interior of a rectangle? (Marks 2)

Q.4 vii) Find area of figure. (Marks 2)



Q.4 viii) Define median of a triangle. (Marks 2)

**Q.4 ix) Construct ΔABC , in which
 $m\angle B = 60^\circ$, $m\overline{BC} = 3.7$ cm, $m\overline{AB} = 4.8$ cm (Marks 2)**

Q5. (A) Solve by Cramer's Rule.

$$4x + y = 9, \quad -3x - y = -5$$

Q.5 B) If $z = \frac{4 - 3i}{2 + 4i}$, then calculate $z - \bar{z}$. (Marks 4)

**Q.6 A) Use logarithm table, find the value of
 0.8176×13.64 (Marks 4)**

Q.6 B) If $x = 2 + \sqrt{3}$ then find $x - \frac{1}{x}$ and $\left(x - \frac{1}{x}\right)^2$. (Marks 4)

Q.7 A) Factorize $8x^3 + 60x^2 + 150x + 125$. (Marks 4)

**Q.7 B) Use division method to find the square root of the
following expression.**

$$4 + 25x^2 - 12x - 24x^3 + 16x^4. \quad (\text{Marks 4})$$

Q.8 A) Solve the inequality $3 \geq \frac{7-x}{2} \geq 1$ (Marks 4)

Q.8 B) Construct the ΔPQR and draw its altitudes.

$$m\overline{PQ} = 6\text{cm}, m\overline{QR} = 4.5\text{cm}, m\overline{PR} = 5.5\text{ cm}$$

(Marks 4)

**Q.9) Prove that any point on the bisector of an angle is
equidistant from its arms.**

OR

**Prove that parallelogram on the same base and
between the same parallel lines (or of the same
altitude) are equal in area.**

Grade – 9 Maths
Multan Board
2018
Group 2

MCQs

**i) The ordered of matrix [2 1] is:-
1)**

(Mark

- A. 2-by-1
- B. 1-by-2
- C. 1-by-1
- D. 2-by-2

Answer:

- B. 1-by-2

ii) Every real number

is:-

(Mark 1)

- | | | | |
|----|---|----------|---------|
| A. | A | positive | integer |
| B. | A | rational | number |
| C. | A | negative | integer |
| D. | A | complex | number |

Answer:

- D. A complex number

iii) The logarithm of any number to itself as base is:-

(Mark 1)

- A. 1
- B. 0
- C. -1
- D. 10

Answer:

- A. 1

**iv) a^3+b^3 is equal to:-
1)**

(Mark

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

Answer:

- B. $(a+b)(a^2-ab+b^2)$

v)will be added to complete the square of $9a^2-12ab$

(Mark 1)

- A. $-16a^2$
- B. $16a^2$
- C. $4b^2$
- D. $-4b^2$

Answer:

- C. $4b^2$

vi) L.C.M of a^2+b^2 and a^4-b^4 is:-

(Mark 1)

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

Answer:

- C. a^4-b^4

vii) A statement involving any of symbol $<$, $>$, \geq or \leq is called:- (Mark 1)

- A. Equation
- B. Identity
- C. Inequality
- D. Linear equation

Answer:

- C. Inequality

viii) Point (2,-3) lies in quadrant:- (Mark 1)

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

Answer:

- D. IV

ix) Mid point of the points (2,2) and (0,0) is:- (Mark 1)

- A. (1,1)
- B. (1,2)
- C. (0,1)
- D. (-1,-1)

Answer:

- A. (1,1)

x) A ray has end points:- (Mark 1)

- A. Three
- B. One
- C. Four
- D. Two

Answer:

- B. One

xi) In a parallelogram opposite angles are:- (Mark 1)

- A. Equal
- B. Unequal
- C. Parallel
- D. Collinear

Answer:

- A. Equal

xii) Bisection means to divide into.....equal parts.

(Mark 1)

- A. One
- B. Two
- C. Three
- D. Four

Answer:

- B. Two

xiii) Ratio has.....unit.

(Mark 1)

- A. Kg
- B. m
- C. cm
- D. No any

Answer:

- D. No any

xiv) In a right angled triangle the widest angle is of:-

(Mark 1)

- A. 90°
- B. 60°
- C. 45°
- D. 30°

Answer:

- A. 90°

xv)congruent triangles can be by joining the midpoints of the sides of a triangle.

(Mark 1)

- A. Three
- B. Four
- C. Five
- D. Two

Answer:

- B. Four

Q.2 i) If $A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 6 \\ 5 \end{bmatrix}$ then find AB. (Marks2)

Q.2 ii) Define Scalar Matrix. (Marks 2)

Q.2 iii) Simplify $5^{2^3} \div (5^2)^3$ (Marks2)

Q.2 iv) Find the value of i^{27} (Marks 2)

Q.2 v) Find the value of x if $\log_x 64 = 2$ (Marks2)

Q.2 vi) Prove that $\log_a mn = \log_a m + \log_a n$ (Marks2)

Q.2 vii) Simplify $\frac{8a(x+1)}{2(x^2-1)}$ (Marks 2)

Q.2 viii) Simplify $(3 + \sqrt{3})(3 - \sqrt{3})$ (Marks 2)

Q.2 ix) Factorize $3x^2 - 75y^2$ (Marks 2)

Q.3 i) Find L.C.M of $39x^7y^3z$ and $91x^5y^6z^7$ (Marks 2)

Q.3 ii) Define Extraneous Roots. (Marks 2)

Q.3 iii) Solve $\left|\frac{x+5}{2-x}\right| = 6$

(Marks 2)

Q.3 iv) Define Cartesian Plane. (Marks 2)

Q.3 v) Please put the equation $x-2y=-2$ in the form of $y=mx+c$ then find the values of c and m . (Marks 2)

Q.3 vi) Define Collinear Points. (Marks 2)

Q.3 vii) Find the distance between the given points $A(2,-6), B(3,-6)$ (Marks 2)

Q.3 viii) State A.S.A \cong A.S.A postulate. (Marks 2)

Q.3 ix) Define Parallelogram. (Marks 2)

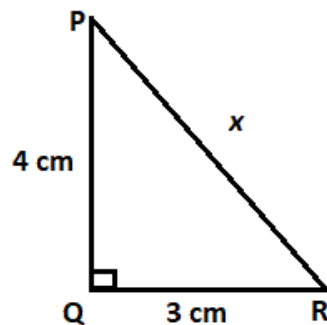
Q.4 i) Define bisection of an angle. (Marks 2)

Q.4 ii) 3 cm, 4 cm and 7 cm are not the lengths of the sides of a triangle. Give reason. (Marks 2)

Q.4 iii) Define Ratio and proportion. (Marks 2)

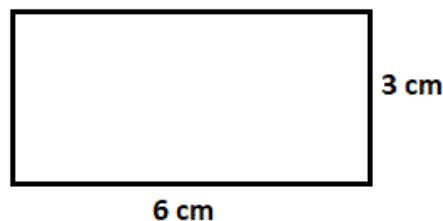
Q.4 iv) State Pythagoras theorem. (Marks 2)

Q.4 v) Find the unknown value x figure. (Marks 2)



Q.4 vi) Define Area of a figure. (Marks 2)

Q.4 vii) Find the area of given figure: - (Marks 2)



Q.4 viii) Construct ΔXYZ in which $m\overline{YZ} = 7.6$ cm, $m\overline{XY} = 6.1$ cm, $m\angle X = 90^\circ$ (Marks 2)

Q.4 ix) Define Orthocentre of a triangle. (Marks 2)

Q.5 a) Solve by using Cramer's rule. $3x-2y=-6$, $5x-2y=-10$ (Marks 4)

Q. 5 b) Simplify $\left(\frac{a^{2l}}{a^{l+m}}\right)\left(\frac{a^{2m}}{a^{m+n}}\right)\left(\frac{a^{2n}}{a^{n+l}}\right)$ (Marks 4)

Q. 6 a) Given $A = A_0 e^{-kd}$ if $k = 2$ what should be the value of 'd' to make $A = \frac{A_0}{2}$? (Marks 4)

Q.6 b) If $x - \frac{1}{x} = 4$ then find $x^3 - \frac{1}{x^3}$ (Marks 4)

Q.7 a) Factorize the following cubic polynomial by factor theorem.

$x^3 - 6x^2 + 3x + 10$ (Marks 4)

Q.7 b) Use division method to find the square root of the expression.

$x^4 - 10x^3 + 37x^2 - 60x + 36$ (Marks 4)

Q. 8 a) Solve $-5 \leq \frac{4-3x}{2} < 1$ (Marks 4)

Q.8 b) Construct ΔABC and draw the perpendicular bisectors of its sides $m\overline{BC} = 2.9 \text{ cm}, m\angle A = 30^\circ, m\angle B = 60^\circ$ (Marks 4)

Q.9 a) Any point inside an angle, equidistant from its arms, is on the bisector of it. (Marks 8)

Q.9 b) Triangles on the same base and of the same altitudes are equal in area. (Marks 8)