

Grade – 9 Maths
Multan Board
2019
Group 1

MCQs

i) The order of matrix $\begin{bmatrix} 2 & 1 \end{bmatrix}$ is: (Mark 1)

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

Answer:

B.

ii) Write $\sqrt[7]{x}$ in exponential form (Mark 1)

- A. x
- B. x^7
- C. $x^{\frac{1}{7}}$
- D. $x^{\frac{2}{7}}$

Answer:

C.

iii) The logarithm of any number to itself base is: _____. (Mark 1)

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

Answer:

A.

(iv) $\frac{a^2 - b^2}{a + b}$ is equal to..... (Mark 1)

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

Answer:

D.

(v) Find m so that x^2+4x+m is a complete square. (Mark 1)

- A. 8
- B. -8
- C. 4
- D. 16

Answer:

C

vi) The square root of a^2-2a+1 is _____. (Mark 1)

- A. $\pm(a+1)$
- B. $\pm(a-1)$
- C. $a-1$
- D. $a+1$

Answer:

B

vii) If the capacity 'C' of an elevator is at most 1600 pounds, then (Mark 1)

- A. $C < 1600$
- B. $C \geq 1600$
- C. $C \leq 1600$
- D. $C > 1600$

Answer:

C.

viii) If $(x,0)=(0,y)$ then (x,y) is equal to _____. (Mark 1)

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

Answer:

C.

ix) A triangle having all sides are equal , is called _____. (Mark 1)

- A. Isosceles
- B. Scalene
- C. Equilateral
- D. Right-angled

Answer:

C.

x) In a triangle, there can be ___ right angle. (Mark 1)

- A. Only one
- B. Two
- C. Three
- D. Four

Answer:

A.

xi) In a parallelogram opposite angles are _____. (Mark 1)

A. Non-parallel

B. Unequal

C. Vertical

D. Equal

Answer:

D.

xii) The right bisector of the sides of a triangle are _____. (Mark 1)

A. Concurrent

B. Equal

C. Not concurrent

D. None of these

Answer:

A.

xiii) Symbol used for similarity is _____. (Mark 1)

A. \cong

B. \sim

C. Δ

D. \neq

Answer:

B.

xiv) _____ of a parallelogram is equal to the product of its base and altitude. (Mark 1)

A. Area

B. Length

C. Width

D. None of these

Answer:

A.

xv) The diagonal of a parallelogram ____ each other. (Mark 1)

A. Perpendicular

B. Trisect

C. Bisect at the right angle

D. Bisect

Answer:

C.

Q.2 i) Find the product of $\begin{bmatrix} 6 & -0 \end{bmatrix} \begin{bmatrix} 4 \\ 0 \end{bmatrix}$. (Marks 2)

Q.2 ii) Find the value of X, if $\begin{bmatrix} 2 & 1 \\ 3 & -2 \end{bmatrix} + X = \begin{bmatrix} 4 & -2 \\ -1 & -2 \end{bmatrix}$. (Marks 2)

Q.2 iii) Evaluate i^{27} . (Marks 2)

Q.2 iv) Simplify $\sqrt[4]{81y^{-12}x^{-8}}$ (Marks 2)

Q.2 v) Write $\log \sqrt[3]{\frac{7}{15}}$ into sum or difference of logarithm. (Marks 2)

Q.2 vi) Find the value of x in $\log_4 256 = x$. (Marks 2)

Q.2 (vii) Reduce $\frac{8a(x+1)}{2(x^2-1)}$ to the lowest form. (Marks 2)

Q.2 (viii) Rationalize the denominator $\frac{2}{\sqrt{5} + \sqrt{2}}$. (Marks 2)

Q.2 ix) Factorize $x^2 - 21x + 108$. (Marks 2)

Q.3 i) Define H.C.F.

(Marks 2)

Q.3 ii) Solve $|3x+10|=5x+6$.

(Marks 2)

Q.3 iii) Solve the equation $\sqrt[3]{2x-4} - 2=0$.

(Marks 2)

Q.3 iv) Define an ordered pair with an example.

(Marks 2)

Q.3 v) Verify whether the following point (-1,1) lies on the line $2x - y + 1 = 0$ or not.

(Marks 2)

Q.3 vi) Define collinear points.

(Marks 2)

Q.3 vii) Find the midpoint between (6,6) and (4,-2).

(Marks 2)

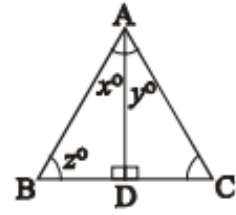
Q.3 viii) What is meant by congruency of triangles ?

(Marks 2)

Q.3 ix) One angle of a parallelogram is 130° . Find the measure of its remaining angles.

(Marks 2)

Q.4 i) The given triangle ABC is equilateral triangle and AD is bisector of angle A, then find the values of unknowns x° , y° and z° . (Marks 2)



Q.4 ii) What will be the angle for shortest distance from an outside point to the line? (Marks 2)

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

Q.4 iv) Define proportion. (Marks 2)

Q.4 v) Define pythagoras Theorem. (Marks 2)

Q.4 vi) Find an unknown x in the figure. (Marks 2)

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

Q.4 viii) Define orthocenter of triangle. (Marks 2)

Q.4 ix) Construct a triangle ABC in which $\overline{mAB}=3.2\text{cm}$, $\overline{mBC}=4.2\text{cm}$, $\overline{mCA}=5.2\text{cm}$. (Marks 2)

Q.5 a) Solve by the Cramer's rule. (Marks 4)

$$\begin{aligned}2x + y &= 3 \\6x + 5y &= 1\end{aligned}$$

Q.5 b) Solve the equation for x and y. $(3-2i)(x+iy)=2(x-2yi)+2i-1$. (Marks 4)

Q.6 a) Use log table to find the value of $\frac{438\sqrt{0.056}}{(388)^4}$. (Marks 4)

Q.6 b) If $a+b+c=7$ and $ab+bc+ca=9$ then find the value of $a^2+b^2+c^2$. (Marks 4)

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

$$x^3 - 4x^2 + x + 6$$

(Marks 4)

Q.7 b) Find the square root of $4x^4 + 12x^3 + x^2 - 12x + 4$. (Marks 4)

Q.8 (a) Solve the equation $\frac{5(x-3)}{6} - x = 1 - \frac{x}{9}$. (Marks 4)

Q.8 b) Construct the ΔPQR and draw the altitudes (Marks 4)
 $\overline{PQ} = 6\text{cm}$, $\overline{QR} = 4.5\text{cm}$, $\overline{PR} = 5.5\text{cm}$

Q.9 Prove that any point on the bisector of an angle is equidistant from its arms. (Marks 8)

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

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

Answer:

- C. $[2x-y]$

ii) Real part of $2ab(1+i^2)$ is:- (Mark 1)

- A. $2ab$
- B. $-2ab$
- C. $2abi$
- D. $-2abi$

Answer:

- B. $-2ab$

iii) The logarithm of unity to any base is:- (Mark 1)

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

Answer:

- D. 0

iv) $1/a-b - 1/a+b$ is equal to:- (Mark 1)

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

Answer:

- B. $2b/a^2-b^2$

v) Factors of $5x^2-17xy-12y^2$ are:- (Mark 1)

- A. $(x+4y),(5x+3y)$
- B. $(x-4y),(5x-3y)$
- C. $(x-4y),(5x+3y)$
- D. $(5x-4y),(x+3y)$

Answer:

- C. $(x-4y),(5x+3y)$

vi) What should be added to complete the square of x^4+64 ? (Mark 1)

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

Answer:

- C. $16x^2$

vii) $x = 0$ is a solution of the inequality.

(Mark 1)

- A. $x > 0$
- B. $3x+5 < 5$
- C. $x+2 < 0$
- D. $x-2 < 0$

Answer:

- D. $x-2 < 0$

viii) If $(x-1, y+1) = (0, 0)$ then (x, y) is equal to:-

(Mark 1)

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

Answer:

- A. $(1, -1)$

ix) A line segment has end point/points:-

(Mark 1)

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

Answer:-

- B. Two

x) A ray has end point/points:-

(Mark 1)

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

Answer:

- B. One

xi) In a parallelogram opposite sides are _____

(Mark 1)

- A. Congruent
- B. Non-congruent
- C. Perpendicular
- D. Non-parallel

Answer:

- A. Congruent

xii) The bisectors of the angles of a triangle are _____

(Mark 1)

- A. Equal
- B. Perpendicular
- C. Concurrent
- D. Equidistant

Answer:

- C. Concurrent

xiii) A line segment has _____ midpoint.

(Mark 1)

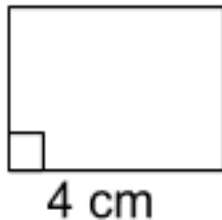
- A. 1
- B. 2
- C. 3
- D. 4

Answer:

- A. 1

xiv) Area of figure

(Mark 1)



- A. 20 cm^2
- B. 8 cm^2
- C. 64 cm^2
- D. 16 cm^2

Answer:

- D. 16 cm^2

xv) The medians of a triangle cut each other in the ratio _____

(Mark 1)

- A. 2 : 1
- B. 1 : 3
- C. 1 : 4
- D. 1 : 1

Answer:

- A. 2 : 1

Q.2 i)

(Marks 2)

. Find the product of $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix} \begin{bmatrix} 1 & 2 \\ 3 & 4 \\ -1 & 1 \end{bmatrix}$

Q.2 ii)

(Marks 2)

If $\begin{bmatrix} a+3 & 4 \\ 6 & b-1 \end{bmatrix} = \begin{bmatrix} -3 & 4 \\ 6 & 2 \end{bmatrix}$, then find a and b .

**Q.2 iii) Find the values of x and y if $x+iy+1=4-3i$
(Marks 2)**

Q.2 iv)

(Marks 2)

. Simplify $\sqrt{25x^{10n}y^{8m}}$

Q.2 v)

(Marks 2)

Write $2 \log x - 3 \log y$ in the form of single logarithm.

**Q.2 vi) Find the value of x if $\log_{64} x = -\frac{2}{3}$
(Marks 2)**

Q.2 vii) Reduce $\frac{120x^2y^3z^5}{30x^3z^2}$ to the lowest form. (Marks 2)

Q.2 viii)

(Marks 2)

Simplify $\sqrt[5]{243x^5y^{10}z^{15}}$

**Q.2 ix) Determine if $(x-2)$ is a factor of x^3-4x^2+3x+2
(Marks 2)**

**Q.3 i) Define
L.C.M. (Marks 2)**

**Q.3 ii) Solve the equation, $|2x+3| = 11$
(Marks 2)**

Q.3 iii) Solve the equation . $\sqrt{2t+4} = \sqrt{t-1}$ (Marks 2)

**Q.3 iv) Define Coordinate
Axes. (Marks 2)**

Q.3 v) (Marks 2)

Find the value of m and c after expressing $x - 2y = -2$ in the form of $y = mx + c$

**Q.3 vi) Define Coordinate
Geometry. (Marks 2)**

**Q.3 vii) Find the distance between the given pair of
points $A(-4,\sqrt{2})$, $B(-4,-3)$
(Marks 2)**

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

**Q.3 ix) Define Parallelogram.
2)**

(Marks

**Q.4 i) Define right bisector of a line
segment. (Marks 2)**

**Q.4 ii) Explain that the given lengths can be the lengths of the sides
of a triangle or not. 2 cm, 3 cm, 5
cm (Marks 2)**

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

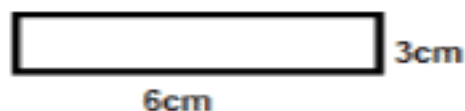
**Q.4 iv) Verify that the triangle having the following measures of the
sides is right angled $a = 5$ cm, $b = 12$ and $c = 13$ cm (Marks 2)**

**Q.4 v) State Pythagoras
Theorem. (Marks 2)**

**Q.4 vi) Define Rectangular
region. (Marks 2)**

Q.4 vii) (Marks 2)

Find the area of given figure



Q.4 viii) (Marks 2)

Construct a ΔABC in which $m\overline{AB} = 3.2\text{cm}$, $m\overline{BC} = 4.2\text{cm}$, $m\overline{CA} = 5.2\text{cm}$

Q.4 ix) Define incentre of the triangle. (Marks 2)

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

Q.5 b) Solve for x and y $(2-3i)(x+yi) = 4+i$ (Marks 4)

Q.6 a) (Marks 4)

Use log table find the value of $\frac{83 \times \sqrt[3]{92}}{127 \times \sqrt[5]{246}}$

Q.6 b) If $x+1/x = 3$ then find x^2+1/x^2 (Marks 4)

Q.7 a) Factorize the following cubic polynomial by factor theorem. $x^3+x^2-10x+8$ (Marks 4)

Q.7 b) Use division method to find the square root of the expression. $x^4-10x^3+3x^2-60x+36$ (Marks 4)

Q.8 a) Solve the following equation for x,

$$|x+2|-3 = 5-|x+2|$$

(Marks 4)

Q.8 b) For the given sides construct a ΔABC and draw the bisector of their angles $m\overline{AB} = 4.6$ cm, $m\overline{BC} = 5$ cm, $m\overline{CA} = 5.1$ cm. (Marks 4)

Q.9) Prove that any point equidistant from the endpoints of a line segment is on the right bisector of it. (Marks 8)