LAHORE BOARD

GRADE 9

MATHS

2019 GROUP 1

MCQ'S

Lesson 1 of 38

Section-A (MCQs)

i) 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. $\pm(a-1)$

ii) A diagonal of a parallelogram divides it into_____congruent triangles.   **(Mark 1)**

A. 2
B. 3
C. 4
D. 6
Answer:
A. 2

iii) Two parallel lines intersect at_____point/points.   **(Mark 1)**

A. Three
B. Two
C. One
D. No
Answer:
D. No

iv) The diagonals of parallelogram _____each other.   (Mark 1)

A. Bisect
B. Trisect
C. Bisect at right angle
D. Trisect at right angle
Answer:
A. Bisect

A. 3-by-2
B. 2-by-3
C. 1-by-3
D. 3-by-1
Answer:
B. 2-by-3

v) Order of transpose of matrix $\begin{bmatrix} 2 & 1 \\ 0 & 1 \\ 3 & 2 \end{bmatrix}$ is: (Mark 1)

A. 3-by-2
B. 2-by-3
C. 1-by-3
D. 3-by-1
Answer:
B. 2-by-3

vi) x=0 is a solution of the inequality_____   (Mark 1)

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

vii) Any point on the bisector of an angle is _____from its arms. (Mark 1)

A. Un-equidistance
B. Equidistance
C. Large disatnce
D. Small distance

Answer:
B. Equidistance

viii) (3+√2)(3-√2) is equal to: (Mark 1)

A. 7
B. -7
C. -1
D. 1
Answer:
A. 7

ix) Unit of ratio is_____.   (Mark 1)

A. Degree
B. None
C. cm
D. π
Answer:
B. None

x) Point (-3,-3) lies in quadrant.   (Mark 1)

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

xi) The logarithm of unity to any base is_____   (Mark 1)

A. 1
B. 10
C. e
D. 0
Answer:
D. 0

xii) A ray has endpoints   (Mark 1)

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

xiii) Distance between points (0,0) and (1,1) is_____   (Mark 1)

A. 0
B. 1
C. 2
D. √2
Answer:
D. √2

xiv) The conjugate of 5+4i is_____   (Mark 1)

A. -5+4i
B. -5-4i
C. 5-4i
D. 5+4i
Answer:
C. 5-4i

xv) In a parallelogram opposite angles are_____   (Mark 1)

A. Perpendicular
B. Equal
C. Unequal
D. Acute
Answer:
B. Equal

Q.2 i) Define column matrix.   (Marks 2)

Q.2 ii) Find the transpose of the matrix: B=[5   1   -6]   (Marks 2)

Q.2 iii) Simplify: $\sqrt[2]{-125}$ (Marks 2)

Q.2 iv) Write real and imaginary part of the number -1+2i.   (Marks 2)

Q.2 v) Express in scientific notation: 83,000   (Marks 2)

Q.2 vi) Find the value of x when log₃x=4   (Marks 2)

Q.2 vii) Evaluate $\dfrac{x^3 y - 2z}{xz}$ **for** $x = -1,\ y = -9,\ z = 4$ (Marks 2)

Q.2 ix) Factorize:24x²-65x+21   (Marks 2)

Q.3 i) Find the H.C.F of the following expression 10xy²z,85x²yz and 187 xyz²   (Marks 2)

Q.3 ii) Solve the equation: $\sqrt{5x-7} - \sqrt{x+10} = 0$ (Marks 2)

Q.3 iii) Solve: |2x+3|=11   (Marks 2)

Q.3 iv) Find the value of m and c of 2x-y=7 by expressing it in the form of y=mx+c.   (Marks 2)

Q.3 v) Define origin. (Marks 2)

Q.3 vi) Find the distance between the points A(-8,1),B(6,1). (Marks 2)

Q.3 vii) Define Scalene triangle. (Marks 2)

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

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

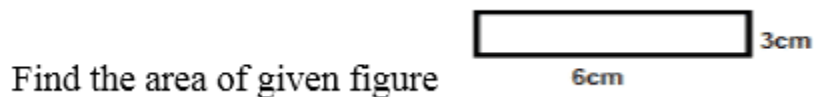**Q.4 i)** Define the bisector of a line segment. (Marks 2)

Q.4 ii) 3 cm, 4 cm, 5 cm are the length of the triangle. Give the reason. (Marks 2)

Q.4 iii) Define congruent triangles. (Marks 2)

Q.4 iv) Find unknown value of x in given figure: (Marks 2)

Q.4 v) What is converse of Pythagoras theorem. (Marks 2)

Q.4 vi) (Marks 2)

Find the area of given figure

3cm

6cm

Q.4 vii) Define the triangular region. (Marks 2)

Q.4 viii) What is meant by circumcentre? (Marks 2)

Q.4 ix) (Marks 2)

Construct a $\triangle ABC$, in which $m\overline{AB} = 4.2$cm, $m\overline{BC} = 3.9$cm, $m\overline{CA} = 3.6$cm

Q.5 a) Solve the system of linear equations by Cramer's rule:
2x-2y=4
3x+2y=6 (Marks 4)

Q.5 b) (Marks 4)

Simplify $\left(\dfrac{a^{2l}}{a^{l+m}}\right) \cdot \left(\dfrac{a^{2m}}{a^{m+n}}\right) \cdot \left(\dfrac{a^{2n}}{a^{n+l}}\right)$

Q.6 a) Use log table to find the value of : 0.8176×13.64 (Marks 4)

Q.6 b) (Marks 4)

If $m + n + p = 10$ and $mn + np + mp = 27$ then find value of $m^2 + n^2 + p^2$

Q.7 a) Factorize: 9x⁴+36y⁴. (Marks 4)

Q.7 b) For what value of k is (x+4) the H.C.F of $x^2+x-(2k+2)$ and $2x^2+kx-12$? (Marks 4)

Q.8 a) Solve: $-5 \leq \frac{4-3x}{2} < 0$ (Marks 4)

Construct the triangle ABC, draw bisectors of their angles and verify their concurrency.

$m\overline{AB} = 3.6cm, m\overline{BC} = 4.2cm, m\angle B = 75^0$

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

OR

Q.9) Prove that parallelograms on the same base and between the same parallel lines (or of the same altitude) are equal in area. (Marks 8)

LAHORE BOARD

GRADE 9

MATHS

2019 GROUP 2

MCQ'S

Section-A (MCQs)

i) In a parallelogram opposite angles are: (Mark 1)

A. unequal
B. Equal/congruent
C. Non-congruent
D. Concurrent
Answer:
B. Equal/congruent

ii) The factors of x^2-5x+6 are: (Mark 1)

A. $(x+1),(x-6)$
B. $(x-2),(x-3)$
C. $(x+6),(x-1)$
D. $(x+2),(x+3)$
Answer:
B. $(x-2),(x-3)$

iii) Distance between points (0,0) and (1,1) is_____ (Mark 1)

A. 0
B. 1
C. 2
D. $\sqrt{2}$
Answer:
D. $\sqrt{2}$

iv) A triangle having two sides congruent is called_____ (Mark 1)

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

Answer:

D. Isosceles

v) The symbol of inequality is_____ (Mark 1)

A. =
B. ≠
C. ~
D. ≥

Answer:

D. ≥

vi) $\log_b a \times \log_c b$ can be written as: (Mark 1)

A. $\log_a c$
B. $\log_b c$
C. $\log_a b$
D. $\log_c a$

Answer:

D. $\log_c a$

vii) Equality of two ratios is defined as_____: (Mark 1)

A. Ratio
B. Proportion
C. Equality
D. Congruent

Answer:

B. Proportion

viii) The idea of matrices was given by_____ (Mark 1)

A. Arthur Cayley
B. Berguiz
C. Al-Khwarizmi
D. Jan Nipper

Answer:

A. Arthur Cayley

ix) The formula of H.C.F of two polynomials is p(x) and q(x) is: (Mark 1)

A. $\dfrac{p(x) \times q(x)}{L.C.M}$

B. $\dfrac{L.C.M}{p(x) \times q(x)}$

C. $\dfrac{L.C.M \times p(x)}{q(x)}$

D. $\dfrac{L.C.M \times q(x)}{p(x)}$

Answer:

` A. $\dfrac{p(x) \times q(x)}{L.C.M}$

x) $\sqrt[2]{a}$ usually written as: (Mark 1)

A. (a)^2
B. (√a)
C. √(a)^2
D. √a^2
Answer:
B. (√a)

xi) Cartesian plan is divided into_____quadrants: (Mark 1)

A. 3
B. 2
C. 4
D. 5
Answer:
C. 4

xii) Congruent figures have_____area. (Mark 1)

A. Same
B. Different
C. No any
D. Empty
Answer:
A. Same

xiii) A ray has end points: (Mark 1)

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

xiv) x=0 is a solution of the inequality_____ (Mark 1)

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

xv) A ray is called a bisector of line segment if it divides the angle into _____equal parts: (Mark 1)

A. 4
B. 3
C. 2

D. 5

Answer:

C. 2

Q.2 i) Find the product: (Marks 2)

Q.2 ii) If (Marks 2)

$$2\begin{bmatrix} 2 & 4 \\ -3 & a \end{bmatrix} + 3\begin{bmatrix} 1 & b \\ 8 & -4 \end{bmatrix} = \begin{bmatrix} 7 & 10 \\ 18 & 1 \end{bmatrix}$$

then find a and b.

Q.2 iii) Give a rational number between 3/4 and 5/9. (Marks 2)

Q.2 iv) (Marks 2)

Simplify $(x^3)^2 \div x^{3^2}$; $x \neq 0$

Q.2 v) Express the number 0.0074 in scientific notation. (Marks 2)

Q.2 vi) Calculate $\log_3 2 \times \log_2 81$ (Marks 2)

Q.2 vii) (Marks 2)

Evaluate $\dfrac{3x^2\sqrt{y}+6}{5(x+y)}$ if $x = -4$ and $y = 9$

Q.2 viii) (Marks 2)

If $x = 4 - \sqrt{17}$ then find $x - \dfrac{1}{x}$

Q.2 ix) Factorize x(x-1)-y(y-1) (Marks 2)

Q.3 i) (Marks 2)

Use factorization to find the square root of $\dfrac{1}{16}x^2 - \dfrac{1}{12}xy + \dfrac{1}{36}y^2$

Q.3 ii) Define a linear inequality in one variable. (Marks 2)

Q.3 iii) Solve the inequality 3x+1<5x-4 (Marks 2)

Q.3 iv) Define Co-ordinate axes. (Marks 2)

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

Q.3 vi) Define isosceles triangle.   (Marks 2)

Q.3 vii) Find the distance between the pairs of points: A(9,2), B(7,2).   (Marks 2)
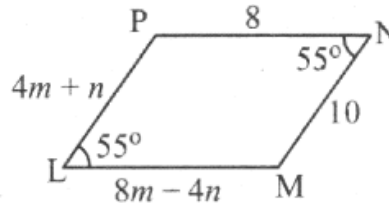
Q.3 viii) State H.S postulate.   (Marks 2)

Q.3 viii) State H.S postulate.   (Marks 2)

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

Q.4 ii) 3 cm, 4 cm, and 7 cm are not the length of a triangle. Give the reason.   (Marks 2)
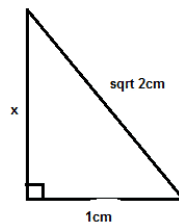
Q.4 iii) Define proportion?   (Marks 2)

Q.4 iv) Define Pythagoras theorem.   (Marks 2)
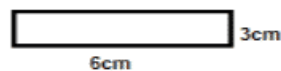
Q.4 v) Find unknown value of x in given figure: (Marks 2)

Q.4 vi)   (Marks 2)

Find the area of given figure

Q.4 vii) State congruent area axiom.   (Marks 2)

Q.4 viii)   (Marks 2)

Construct a $\triangle ABC$ in which $mAB = 4.8cm, mBC = 3.7cm$ & $m\angle B = 60^0$

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

Q.5 a) Solve the system of linear equations by using matrix inversion method: 3x-4y=4, x+2y=8   (Marks 4)

Q.5 b)   (Marks 4)

Prove that $\left[\dfrac{x^p}{x^q}\right]_{q+p} \times \left[\dfrac{x^c}{x^p}\right]_{p+c} \times \left[\dfrac{x^q}{x^c}\right]_{c+q} = 1$

Q.6 a) (Marks 4)

Solve with logarithm $\dfrac{0.678 \times 9.01}{0.0234}$

Q.6 b) (Marks 4)

If $p = 2 + \sqrt{3}$ then find the values of $p^2 + \dfrac{1}{p^2}$

Q.7 a) (Marks 4)

If $(x - 1)$ is a factor of $x^3 - kx^2 + 11x - 6$, then find the value of k.

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

Q.8 a) (Marks 4)

Find the solution set of the equation $\dfrac{5(x-3)}{6} - x = 1 - \dfrac{x}{9}$

Q.8 b) (Marks 4)

Construct a $\triangle ABC$, and draw bisectors of angles. $m\overline{CA} = 5.2cm, m\overline{AB} = 4.2cm, m\overline{BC} = 6cm$

Q.9) Prove that the right bisectors of the sides of a triangle are concurrent. (Marks 8)

OR

Q.9) Prove that parallelograms on equal bases and having the same (or equal) altitude are equal in area. (Marks 8)