LAHORE BOARD

GRADE 9

MATHS

2018 GROUP 1

MCQ'S

Section A-(MCQs)

i) Is x no larger than 10, then…… **(Mark 1)**

A. $x \geq 8$
B. $x \geq 10$
C. $x < 10$
D. $x > 10$
Answer
C. $x < 10$

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

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

iii) A ray has … end points: **(Mark 1)**

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

iv) H.C.F of $a^3 + b^3$ and $a^2 - ab + b^2$ is…… **(Mark 1)**

A. a+b
B. $a^2 - ab + b^2$

C. a-b
D. a^2+b^2
Answer:
B. a^2-ab+b^2

Q.1 v): Write $4^{\frac{2}{3}}$ with raical sign : Marks1

a. $\sqrt[3]{4^2}$
b. $\sqrt[2]{4^3}$
c. $\sqrt{4^3}$
d. $\sqrt{4^6}$

Q.1 vi): $\frac{1}{a-b}$ - $\frac{1}{a+b}$ is equal to: Marks1

a. $\frac{2a}{a^2-b^2}$
b. $\frac{2b}{a^2-b^2}$
c. $\frac{-2a}{a^2-b^2}$
d. $\frac{-2b}{a^2-b^2}$

vii) The bisectors of the angles of a triangle are….: (Mark 1)

A. Collinear
B. Non-collinear
C. Non-concurrent
D. Concurrent
Answer
D. Concurrent

viii) Triangles on equal bases and of equal altitudes are…….in area: (Mark 1)

A. Same
B. Equal
C. Unequal
D. Similar
Answer:
B. Equal

Q1(ix): If $X+\begin{bmatrix}-1 & -2\\ 0 & -1\end{bmatrix}=\begin{bmatrix}1 & 2\\ 0 & 2\end{bmatrix}$ then X is equal to:

(Marks1)

a. $\begin{bmatrix}2 & 2\\ 2 & 0\end{bmatrix}$

b. $\begin{bmatrix}0 & 2\\ 2 & 2\end{bmatrix}$

c. $\begin{bmatrix}2 & 0\\ 0 & 2\end{bmatrix}$

d. $\begin{bmatrix}2 & 2\\ 0 & 2\end{bmatrix}$

x) If (x,0)=(0,y), then(x,y) is: (Mark 1)

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

xi) Symbol used for congruent is……: (Mark 1)

A. =
B. ~
C. ≅
D. ↔
Answer:
C. ~

xii) Medians of triangle are: (Mark 1)

A. Parallel
B. Equal
C. Concurrent

D. Non-concurrent

Answer

C. Concurrent

xiii) The medians of a triangle cut each other in the ratio…… (Mark 1)

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

Answer

C. 2:1

xiv) Factors of $3x^2$-x-2 (Mark 1)

A. (x+1),(3x-2)
B. (x+1),(3x+2)
C. (x-1),(3x+2)
D. (x-1),(3x+2)

Answer

D. (x-1),(3x+2)

Q.1 xv): The value of $\log(\frac{p}{q})$ is…. Marks1

a. Logp-log q
b. $\frac{logp}{logq}$
c. Logp+logq
d. logq-logp

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

Q2(ii): Find the product of

$$[x \ y]\begin{bmatrix} 2 \\ -1 \end{bmatrix}$$ **(Marks2)**

Q.2 iii) Define irrational numbers. (Marks 2)

Q.2 iv): Simplify: $\sqrt[4]{32}$ **(Marks2)**

Q.2 v) Define scientific notation. (Marks 2)

Q.2 vi): If A=π r^2 find A, when π= $\frac{22}{7}$ and r=15

(Marks2)

Q.2 vii): If a+b=5 and a-b= $\sqrt{17}$, then find the value of ab.

(Marks2)

Q.2 viii): Factorize: 64 x^2 +343 y^3 (Marks2)

Q.2 ix): Find the remainder when 9 x^2 -6x+2 is divided by x-3. (Marks2)

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

Q.3 ii): Solve for x: $|3x - 5| = 4$ **(Marks2)**

Q.3 iii): Solve the equation $\frac{3x}{2}$ **-** $\frac{x-2}{2}$ **=** $\frac{25}{6}$ **(Marks2)**

Q.3 iv): Determine the quadrant of the coordinate plane in which the points. P(-4,3) and Q(-5,-2) lie.

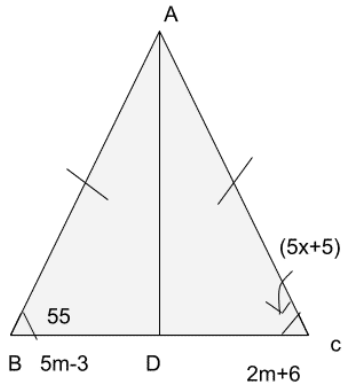
(Marks2)

Q.3 v): Draw the graph of the following x=-6(graph is page size) (Marks2)

Q.3 vi): Find the midpoint of the line segment joining A(2,5) and B(-1,1) (Marks2)

Q.3 vii): Find the distance between the following pair of points : A(2,-6),B(3,-6) (Marks2)

Q.3 ix): Find the value of unknown for the given congruent triangles. (Marks2)



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

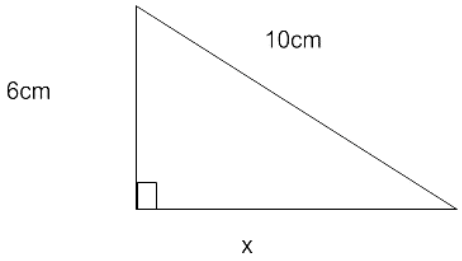
Q.4 ii) If 3cm and 4cm are lenghts of two sides of right angle triangle then what should be the third length of the triangle? (Marks 2)

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

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

Q.4 v): Find the unknown value (x) in the following figure:

(Marks2)



Q.4 vi): Define triangular region. (Marks2)

Q4(vii): Find area of: **Marks2**

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

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

Q.5 a): Solve by the matrix inversion method:
2x+y=3
6x+5y=1 **(Marks4)**

Q5(b): Show that $\left(\frac{x^a}{x^b}\right)^{a+b} * \left(\frac{x^b}{x^c}\right)^{b+c} * \left(\frac{x^c}{a}\right)^{c+a} = 1$ **(Marks4)**

Q6(a): Use log table to find the value of: $\frac{(8.97)^3 * (3.95)^2}{\sqrt[3]{15.37}}$
(Marks4)

Q.6 b): If x+y+z=12 and $x^2 + y^2 + z^2 = 64$**, then find the value of xy+yz+zk** **(Marks4)**

Q.7 a): Factorize ($x^2 - 4x)(x^2 - 4x - 1)$**-20** **(Marks4)**

Q.7 b): Use division method to find the square root of the expression. **(Marks4)**

$4x^4 + 12x^3 + x^2 - 12x + 4$

Q.8 a): Solve the equation: $\frac{2x}{2x+5} = \frac{2}{3} - \frac{5}{4x+10}$ **,(x≠-** $\frac{5}{2}$ **)**
(Marks4)

Q.8 b): Construct ΔPQR and draw its altitudes:
m $\overline{PQ} = 4.5cm,\ m\overline{QR}$ **=3.9cm and m** $\angle R = 45^0$ **(Marks4)**

Q.9 Any point on the right bisector of a line segment is equidistant from its end point. (Marks 8)

OR

Q.9 Triangles in equal bases and of equal altitudes are equal in area. (Marks 8)

LAHORE BOARD

GRADE 9

MATHS

2018 GROUP 2

MCQ'S

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:

ii) point (2,-3) lies in quadrant: **(Mark 1)**

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

Answer:
D. IV

iii) Notation || means: **(Mark 1)**

A. Congruent
B. Equal
C. Parallel
D. un-equal

Answer:
C. Parallel

iv) The right bisectors of the three sides of a triangle are…. **(Mark 1)**

A. Congruent
B. Collinear

C. Concurrent
D. parallel
Answer:
C. Concurrent

v) Bisection means to divide into equal parts: (Mark 1)

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

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

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

vii) Log e =... where (e≈2.718) (Mark 1)

a. 0
b. 0.4343
c. ∞
d. 1
Answer:

viii) Find 'm' so that x^2+4x+m is a complete square: (Mark 1)

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

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

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

Answer:
A. (1, 1)

x) The unit of ratio is: **(Mark 1)**

A. kg
B. m
C. cm
D. None of these
Answer:
D. None of these

xi) Notation used for congruent is: **(Mark 1)**

A. $\perp$
B. $=$
C. $\cong$
D. $\sim$

Answer:

xii) Every real number is: **(Mark 1)**

A. Positive integer
B. A rational number
C. A negative integer
D. A complex number
Answer:
D. A complex number

xiii) A ray has_____ End points: **(Mark 1)**

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

xiv) Conjugate of surd a+ $\sqrt{b}$ is… **(Mark 1)**

A. -a+ $\sqrt{b}$

B. a- $\sqrt{b}$

C. $\sqrt{a}+\sqrt{b}$

D. $\sqrt{a}-\sqrt{b}$

Answer:

xv) If x is not larger than 10,then… **(Mark 1)**

A. $x \geq 8$

B. $x \geq 10$

C. $x < 10$

D. $x > 10$

Answer:

Q.2 i) Define transpose of matrix. **(Marks 2)**

Q.2 ii): Find additive inverse of the matrices: $\begin{bmatrix} \sqrt{3} & 1 \\ -1 & \sqrt{2} \end{bmatrix}$ **(Marks 2)**

Q.2 iii) Define multiplicative identity. **(Marks 2)**

Q.2 iv) Simplify: $5^{2^3} \div (5^2)^3$ **(Marks 2)**

Answer:

Q.2 v): Find the value of x,when: log_{64} **8=** $\frac{x}{2}$ **(Marks 2)**

Answer:

Q.2 vi) Define logarithm. **(Marks 2)**

Q.2 vii): Simplify $\frac{x+2}{2x-3y} \; \frac{4x^2-9y^2}{xy+2y}$ **(Marks 2)**

Answer:

Q.2 viii) Rationalize the denominator of $\frac{1}{3+2\sqrt{5}}$

(Marks 2)

Answer:

Q.2 ix) What is meant by remainder theorem? (Marks 2)

Q.3 i) Find H.C.F of the polynomials by factorization: x^2-4x-12 , x^2+5x+6 (Marks 2)

Q.3 ii) Solve the equation: $\sqrt{3x+4}$=2 (Marks 2)

Answer:

Q.3 iii) Find the solution set of: $|3x-5|$=4 (Marks 2)

Answer:

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

Q.3 v) Find the value of m and c of the line expressing it in the form y=mx+c,3-2x+y=0 (Marks 2)

Q.3 vi) Find the distance between pair of points: A(0,0),(0,-5) (Marks 2)

Q.3 vii) Find the mid-point between the pair of points: A(-4,9), B(-4,-3) (Marks 2)

Q.3 viii) What is meant by the congruency of triangles? (Marks 2)

Q.3 ix) One angle of a parallelogram is $_{130}$. Find the measure of it remaining angles. (Marks 2)

Q.4 i) If 3cm and 4cm are lengths of two sides of a right angle triangle, then what should be the third length of the triangle. (Marks 2)

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

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

Q.4 iv) State converse to pythagoras theorem. (Marks 2)

Q.4 v) Verify that the triangle having the measures of sides a=1.5cm,b=2cm,c=2.5cm are right angled. (Marks 2)

Q.4 vi) Define rectangular region. (Marks 2)

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

Answer:

Q.4 viii) Define incentre. (Marks 2)

Q.4 ix) Construct a ΔABC in which:

m$\overline{AB}$ =3.2cm,m$\overline{BC}$ =4.2cm,m$\overline{CA}$ =5.2cm (Marks 2)

Answer:

Q.5 a) Solve with the help of Cramer's rule: (Marks 4)

2x+y=3, 6x+5y=1

Q5.(b): Simplify: $\left(\frac{a^{2l}}{a^{l+m}}\right)\left(\frac{a^{2m}}{a^{m+n}}\right)\left(\frac{a^{2n}}{a^{n+1}}\right)$ (Marks 4)

Answer:

Q.6 a) Use log table to find the value of: $\frac{0.678\times 9.01}{0.0234}$

(Marks 4)

Answer:

Q.6 b) If x+y=7 and xy=12,then find the value of x^3+y^3 (Marks 4)

Q.7 a) For what value to m is the polynomial (Marks 4)
$p(x)=4x^3-7x^2+6x-3m$ exactly divisible by x+2?

Q.7 b) Simplify to the lowest form: (Marks 4)

$$\frac{2y^2+7y-4}{3y^2-13y+4} \div \frac{4y^2-1}{6y^2+y-1}$$

Answer:

Q.8 a) Find the solution set of the equation: (Marks 4)

$\frac{x}{3x-6} = 2 - \frac{2x}{x-2}$ **,x** $\neq 2$

Answer:

Q.8 b) Construct Δ **ABC.Draw perpendicular bisectors of its sides:** **m** $\angle$ **A=** 120^0 **,m** $\overline{AC}$ **=3.2cm,m** $\overline{AB} = 2.4cm$

(Marks 4)

Answer:

Q.9 Prove that the right bisectors of the sides of a triangle are concurrent.

OR

Q.9) Prove that triangles on equal bases and of equal altitudes are equal in area. **(Marks 4)**