Rawalpindi BOARD

GRADE 9

MATH

2018 GROUP 1

Group A
Section A-(MCQs)

i) Factors of $3x^2-x-2$ are _____. (Mark 1)

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

Answer:
A. (x-1) (3x+2)

ii) H.C.F of a^2-b^2 and a^3-b^3 is (Mark 1)

A. (a+b)
B. (a-b)
C. (a^2+b^2)
D. (a^3-b^3)

Answer:
B. (a-b)

iii) x = 0 is a solution of inequality. (Mark 1)

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

Answer:
D. $x - 2 < 0$

iv) Point-3,-3 lies in quadrent. (Mark 1)

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

Answer:
C. III

v) A triangle having all the sides equal is called_____. (Mark 1)

A. acute triangle
B. isosceles triangle

C. scalene triangle
D. equilateral triangle
Answer:
D. equilateral triangle

vi) A_____ has two endpoints. (Mark 1)

A. line
B. line segment
C. ray
D. plane
Answer:
B. line segment

Q.1 vii): **is the figure of (Mark 1)**

A. parallelogram
B. square
C. rectangle
D. trapezium

Answer:

A. parallelogram

viii) If CD is right bisector of line segment AB, then mAQ=_____. (Mark 1)

A. mBQ
B. mOQ
C.mOA
D.mOB
Answer:
A. mBQ

x) Unit of area is (Mark 1)

A. m^2
B. m^{-2}
C. m
D. m^3
Answer:
A. m^2

xi) 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

Q.1 xii): $\begin{bmatrix} \sqrt{2} & 0 \\ 0 & \sqrt{2} \end{bmatrix}$ **is called_____ matrix. (Mark 1)**

A. zero
B. scalar
C. unitary
D. singular

Answer:
B. scalar

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

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

Answer:
D. 0

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

Answer:

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

Q.2 ii): Find AB, if $A=\begin{bmatrix} 3 & 0 \\ -1 & 2 \end{bmatrix}, B=\begin{bmatrix} 6 \\ 5 \end{bmatrix}$ **(Marks 2)**

Answer:

Q.2 iii): Simplify $(2x^5y^{-4})(-8x^{-3}y^2)$ **(Marks 2)**

Q.2 iv): Simplify in the form of a+bi

$$(\sqrt{5} - 3i)^2$$ **(Marks 2)**

Answer:

Q.2 v) Find the value of x, when $\log_3 x=4$ **(Marks 2)**

Q.2 vi) Express in ordinary notation. **(Marks 2)**

7.865×10^8

Q.2 vii): Reduce to the lowest form

$$\frac{(x+2)(x^2-1)}{(x+1)(x^2-4)}$$ **(Marks 2)**

Answer:

Q.2 ix) Factorize $x^2-11x-42$ **(Marks 2)**

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

Q.3 ii) Solve the equation $\sqrt[3]{3x+5} = \sqrt[3]{x-1}$ (Marks 2)

Q 3 iii): Solve the equation for x. $|3x - 5| = 4$ **(Marks 2)**

Answer:

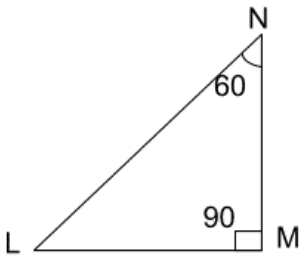
Q.3 iv) Define Origin. **(Marks 2)**

Q.3 v) Plot on the graph paper. **(Marks 2)**
P(0,6),Q(3,0).

Q.3 vi) Write distance formula. **(Marks 2)**

Q.3 vii) Find mid point of the line segment of these points. A(-8,1),(6,1) **(Marks 2)**

Q.3 viii): Find m∠L in given figure.



(Marks 2)

Answer:

Q.4 i) Draw a diagram if any point in the bisector of an angle is Equidistant from its arms. (Marks 2)

Q.4 ii): What is meant by scalene triangle? Draw its figure. (Marks 2)

Q.4 iii): What is meant by proportion?

(Marks 2)

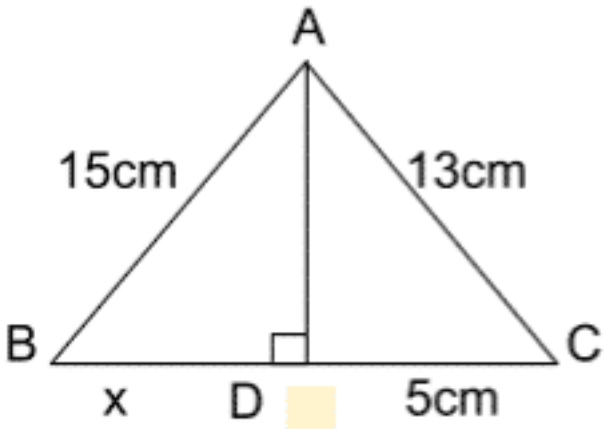
Q. iv): If m$\overline{AE}$ = 3.2cm, m$\overline{AD}$ =2.4cm and m$\overline{BC}$ =4.8cm, find m$\overline{AB}$.

Q.4 v): Define ratio. (Marks 2)

Q.4 vi): Define the altitude of a parallelogram. (Marks 2)

Q.4 vii): Define circumcentre of a triangle. (Marks 2)

Q.4 viii): Find the value of x in the given (Marks 2)



Q.4 ix): Construct a ΔABC , in which m$\overline{AB}$ =4.2cm, m$\overline{BC}$ =3.9cm, m$\overline{CA}$ =3.6cm (Marks 2)

Q.5 a) Solve the given system of linear equations By Cramer's rule. (Marks 4)
3x-2y=-6; 5x-2y=-10

Q.5 b)

$$\sqrt{\frac{(216)^{\frac{2}{3}}(25)^{\frac{1}{2}}}{(0.04)^{-\frac{1}{2}}}}$$

Q.6 a): Use log table to find the value of

$$\sqrt[3]{\frac{0.7214\times 20.37}{60.8}}$$ **(Marks 4)**

Answer:

Q.6 b) Find the value of ab+bc+ca, if (Marks 4) $a^2+b^2+c^2=45$ & a+b+c= -1

Q 7 a) Factorize. $8x^3-125y^3-60x^2y+150xy^2$ (Marks 4)

Q .7 b) Find the square root by division method.
$4+25x^2-12x-24x^3+16x^4$ (Marks 4)

Q.8 a): Find the solution set of given equation.

$$\frac{5(x-3)}{6} - x = 1 - \frac{x}{9}$$ **(Marks 4)**

Answer:

Q 8 b) Construct the ΔABC. Draw the perpendicular Bisectors of its sides.
mAB=2.4cm,mAC=3.2cm,m∠A=120^0 (Marks 4)
Answer:

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

Answer:

OR

Q 9 Prove that triangles on the same bases and of the same altitudes are equal in area. (Marks 8)

Rawalpindi BOARD

GRADE 9

MATH

2018 GROUP 2

Section A-(MCQs)

i) The Bisectors of the angles of a triangle are _____: (Mark 1)

A. Parallel

B. Concurrent

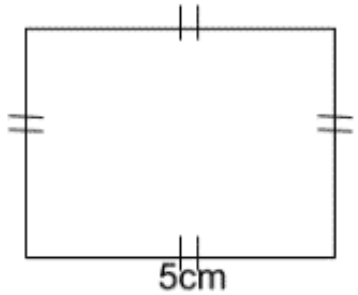
C. Equal

D. Congruent

Answer:

B. Concurrent

ii) Area of the given figure is_____:



(Mark 1)

A. 5 cm^2
B. 10 cm^2
C. 25 cm^2
D. 20 cm^2
Answer:
C. 25 cm^2
iii) Equality between two ratio is called: (Mark 1)
A. Congruent
B. Collinear
C. Proportion
D. altitude
Answer:
C. Proportion
iv) The medians of a triangle cut each other in ratio_____. (Mark 1)
A. 1:3
B. 2:1
C. 1:4
D. 1:1
Answer:
B. 2:1

vi) Real part of $2ab(i+i^2)$is: (Mark 1)
A. -2ab
B. 2abi
C. 2ab
D. -2abi
Answer:
A. -2ab

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

A. log_c^a

B. log_c^a

C. log_c^a

D. log_c^a

Answer:

C. log_c^a

viii) $\left(\sqrt{a}+\sqrt{b}\right)\left(\sqrt{a}-\sqrt{b}\right)$ **is equal to:** **(Mark 1)**

A. a+b

B. a − b

C. a^2+b^2

D. a^2-b^2

Answer:

B. a − b

ix) Factors of $3x^2 - x - 2$ are **(Mark 1)**

A. (x-1)(3 x + 2)

B. (x+1)(3 x + 2)

C. (x+1)(3 x - 2)

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

Answer:

A. (x-1) (3 x+2)

x) H.C.F of $x^2 - 5x + 6$ and $x^2 - x - 6$ is: **(Mark 1)**

A. x+2

B. x-2

C. x^2-4

D. x - 3

Answer:

D. x-3

xi) x=_____ is a solution of the inequality

$-2<x<\frac{3}{2}$ **(Mark 1)**

A. -2
B. 0
C. 3
D. $\frac{3}{2}$

Answer:

B. 0

xii) 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. (0,0)

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

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

Answer:

A. $\sqrt{2}$

xiv) The symbol for line segment is: (Mark 1)

A. $\rightarrow$

B. $\leftrightarrow$

C. $\overline{\quad}$

D. $\simeq$

Answer:

C. $\overline{\quad}$

xv) A parallelogram has congruent: (Mark 1)

A. Opposite sides

B. Opposite angles

C. Diagonal

D. Both A & B

Answer:

D. Both A & B

Q.2 i) Define Diagonal matrix with an example. (Marks 2)

Q.2 ii) If A=$\begin{bmatrix} -1 & 2 \\ 2 & 1 \end{bmatrix}$,then find 2A matrix. (Marks 2)

Answer:

Q.2 iv) Find the value of x and y, if:x+iy+1=4-3i (Marks 2)

Q.2 v) Find $\log_4 2$i.e find log of 2 to the base 4. (Marks 2)

Q.2 vi) Find the value of x if $\log_4 256=x$ (Marks 2)
Q.2 viii) Factorize: $64x^3+343y^3$ (Marks 2)
Q.2 ix) Factorize: $25x^2 + 16 + 40x$ (Marks 2)

Q.3 i) Find the least common multiple. (L.C.M)
$39x^7 y^3z$, $91x^5y^6z^7$

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

Answer:

Q.3 iii) Find the solution set of: $\frac{1}{2}|3x+2|$ - 4=11
(Marks 2)

Answer:

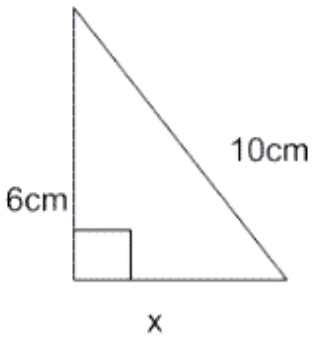
Q.3 iv) What is meant by Cartesian plane? (Marks 2)

Q.3 v) Find the value of m and c of equation 3x-2y+1=0 by expressing it in the form of
y=mx+c. (Marks 2)
Q.3 vi) Define the co-ordinate Geometry. (Marks 2)
Q.3 vii) Find the mid-point of the line segment joining the pair of given points. A(3,-11), (3,-4) (Marks 2)
Q.3 viii) What is meant by congruency of triangle? (Marks 2)

Q.3 ix) Define the square and also draw its figure. (Marks 2)
Q.4 i) What is meant by ratio? (Marks 2)
Q.4 ii) Define triangle. (Marks 2)
Q.4 iii) Define rectangular area. (Marks 2)
Q.4 v) Define congruent triangles. (Marks 2)

Q.4 vi) Verify that the triangle is right-angled triangle:
a=5 cm,b=12cm,c=13 cm (Marks 2)

Q.4 vii) Find the value of x. (Marks 2)



Answer:

Q.4 viii) Construct triangle ABC in which: (Marks 2)
m $\overline{AB}$ =4.8 cm, m $\overline{BC}$ =3.7 cm,m $\angle$ B= 60^0

Answer:

Q.4 ix) Define equilateral triangle. (Marks 2)

Q.5 a) Solve by the matrix inverse method: 4x+2y =8 ; 3x- y= -1 (Marks 4)

Q.5 b) Simplify: (Marks 4)

$$\sqrt{\frac{(216)^{\frac{2}{3}} \times (25)^{\frac{1}{2}}}{(0.04)^{\frac{-3}{2}}}}$$

Answer:

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

$$\frac{(438)^3\sqrt{0.056}}{(388)^4}$$

Q.7 a) Factorize :$3x^2$-38xy-$13y^2$ (Marks 4)

Q.7 b): Use division method to find the square root of the expression $9x^4 - 6x^3 + 7x^2 - 2x + 1$ (Marks 4)

Answer:

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

$$|3x + 2x| = |6x - 7|$$

Answer:

Q.8 b) Construct ΔXYZ and draw their medians.
m $\overline{XY}$ =4.5 cm,m $\overline{YZ}$ =3.4 cm,m $\overline{ZX}$ =5.6 cm
(Marks 4)

Answer:

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

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