BAHAWALPUR BOARD

GRADE 9

Math

2018 GROUP 1

Lesson 1 of 39

Section-A (MCQs)

Ali Azeem

(1). $\begin{bmatrix} \sqrt{2} & 0 \\ 0 & \sqrt{2} \end{bmatrix}$ **is called ____ Matrix:-**

(A). Singular
(B). Unit
(C). Scalar
(D). Zero

Answer: C

Answer: C

(2). Exponential Form of $\sqrt[7]{x}$ **is:-**

(A). x

(B). x^7

(C). $x^{\frac{1}{7}}$

(D). $x^{\frac{7}{2}}$

Answer: C

Answer: C

(3). $\log_b a \times \log_c b$ can be written as:-

(A). $\log_a c$

(B). $\log_c a$

(C). $\log_a b$

(D). $\log_b c$

Answer: B

Answer: B

(4). Degree of Polynomial $4x^4 + 2x^2y$ is:-

(A). 1

(B). 2

(C). 3

(D). 4

Answer: D

Answer: D

(5). Factors of $x^2 + 5x + 6$ are:-

(A). x+1, x-6

(B). x-2, x-3

(C). x+6, x-1

(D). x+2, x+3

Answer: C

Answer: C

(6). H.C.F of $5x^2y^2$ and $20x^3y^3$:-

(A). $20x^3y^3$

(B). $100x^5y^5$

(C). $5x^2y^2$

(D). 5xy

Answer: C

Answer: C

(7). Which of the following is the solution of inequality $3 - 4x \leq 11$:-

(A). -8

(B). -2

(C). -14/4

(D). -3

Answer: B

Answer: B

(8). If (x-1, x+1) = (0, 0), then (x, y) is:-

(A). (1, -1)

(B). (-1, 1)

(C). (1, 1)

(D). (-1, -1)

Answer: A

Answer: A

(9). Distance between the points (0, 0) and (1, 1):-

(A). 0

(B). 1

(C). 2

(D). $\sqrt{2}$

Answer: D

Answer: D

(10). Ray has endpoints:-

(A). 1

(B). 2

(C). 3

(D). None

Answer: A

Answer: A

(11). In the figure, x^o = _____:-

(A). 45^o

(B). 75^o

(C). 105^o

(D). 100^o

Answer: B

Answer: B

(12). The symbol is used for line AB:-

(A). $A \leftrightarrow B$

(B). $\tilde{AB}$

(C). $\overline{AB}$

(D). $\overleftrightarrow{AB}$

Answer: C

Answer: C

(14). If a and b are the length and width of a rectangle then area of Rectangle is:-

(A). a + b

(B). a - b

(C). a × b

(D). a ÷ b

Answer: A

Answer: A

(15). Triangle having two sides congruent is called:-

(A). Scalene

(B). Right triangle

(C). Isosceles

(D). Equilateral

Answer: C

Answer: C

Q.2 i) Define Diagonal Matrix. (Marks 2)

Q.2 ii) Find the Determinant, $A=\begin{bmatrix} 1 & 3 \\ 2 & -2 \end{bmatrix}$. **(Marks 2)**

Q.2 iii) Define Rational Numbers. (Marks 2)

Q.2 iv) Evaluate. i^{50} **(Marks 2)**

Q.2 v) Express in scientific notation.

49,800,000 (Marks 2)

Q.2 vi) **Find the value of "x".**

$$\log_3 x = 5$$ **(Marks 2)**

Q.2 vii) **Define Surd.** **(Marks 2)**

Q.2 viii) **if x = 4, y = -2, z =-1 then find the value of**

$$\frac{x^2y^3 - 5z^4}{xyz}$$ **(Marks 2)**

Q.2 ix) **Factorize.**

$$12x^2 - 36x + 27$$ **(Marks 2)**

Q.3 i) **Find H.C.F of the Polynomials by factorization**

$$X^2 - 4,\ x^2 + 4x + 4$$ **(Marks 2)**

Q.3 ii) **Solve the equation**

$$\sqrt{2x - 3} - 7 = 0$$ **(Marks 2)**

Q.3 iii) **Find the solution set of**

$$|2x + 5| = 11$$ **(Marks 2)**

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

Q.3 v) **Find the value of m and c of the given line**
3x + y - 1 = 0 by expressing it in the form of
y = mx + c. **(Marks 2)**

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

Q.3 vii) **Find the midpoint between the pair of points. A(2, -6), B(3, -6).** **(Marks 2)**

Q.3 viii) **What do you mean by S.S.S ≅ S.S.S postulate?** **(Marks 2)**

Q.3 xi) **Define Bisector of an angle?** **(Marks 2)**

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

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

Q.4 iii) **Write down the formula of pythagoras Theorem.** **(Marks 2)**

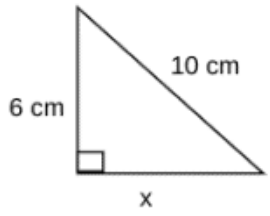
Q.4 vi) **Define Altitude or Height of a triangle.** **(Marks 2)**

Q.4 v) **Define Centroid of a triangle.** **(Marks 2)**

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

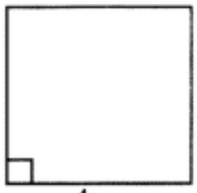
Q.4 vii) **Construct a Triangle ABC in which** $m\overline{CA} = 5.2cm,\ m\overline{BC} = 4.2cm,\ m\overline{AB} = 3.2cm$ **(Marks 2)**

Q.4 viii) **Find the value of "x" in the given diagram**



(Marks 2)

Q.4 ix) Find the area of the given diagram.



(Marks 2)

Q.5 A) Solve the following equations with the help of Cramer's Rule.

$2x - 2y = 4$, $3x + 2y = 6$ **(Marks 4)**

Q.5 B) Simplify.

$$\frac{2^{\frac{1}{3}} \times (27)^{\frac{1}{3}} \times (60)^{\frac{1}{2}}}{(180)^{\frac{1}{2}} \times (4)^{-\frac{1}{3}} \times (9)^{\frac{1}{4}}}$$

(Marks 4)

Q.6 A) Use Logarithm table to find the value of:

0.8176×13.64 **(Marks 4)**

Q.6 B) If $x + \frac{1}{x} = 3$ then find the value of $x^4 + \frac{1}{x^4}$.

(Marks 4)

Q.7 A) Factorize.

$x^3 + 48x - 12x^2 - 64$ **(Marks 4)**

Q.7 B) Find the square root of the following expression by Division Method.

$9x^4 - 6x^3 + 7x^2 - 2x + 1$ **(Marks 4)**

Q.8 A) **Solve the following inequality.**

$$-5 \leq \frac{4-3x}{2} < 1$$

(Marks 4)

Q.8 B) **Construct triangle PQR and draw altitude of its sides**
mRP = 3.63 cm, m∠Q = 30° and m∠P = 105°

(Marks 4)

Q.9 A) **Any point equidistant from the End point of a line segment is on the right bisector of it.** **(Marks 4)**

Q.9 B) **Triangles on the same base and of the same (i.e equal) altitude are equal in area.**

(Marks 4)

BAHAWALPUR BOARD

GRADE 9

Math

2018 GROUP 2

Lesson 1 of 39
Section-A (MCQs)

Q.1

i) $\begin{vmatrix} 2 & 6 \\ 3 & x \end{vmatrix} = 0$ **then x is equal to** **(Mark 01)**

A. 9

B. -6

C. 6

D. -9

Answer:
A

ii) The value of i^9 **is** **(Mark 01)**

A. 1

B. -1

C. i

D. $-i$

Answer:
C

iii) If $a^x = n,$ **then** **(Mark 01)**

A. $a = log_x^n$

B. $x = log_a^n$

C. $x = log_n^a$

D. $n = log_n^x$

Answer:
B

iv) $(\sqrt{a}+\sqrt{b})(\sqrt{a}-\sqrt{b})$ **is equal to** **(Mark 01)**

A. a^2+b^2

B. a^2-b^2

C. $a-b$

D. $a+b$

Answer:
C

v) Find m so that x^2+4x+m **is a complete square** **(Mark 01)**

A. 8

B. -8

C. 4

D. 16

Answer:
C

vi)The square root of a^2-2a+1 **is** **(Mark 01)**

A. $\pm(a+1)$

B. $\pm(a-1)$

C. $a-1$

D. $a+1$

Answer:
B

vii) $x = 0$ **is a solution of inequality** **(Mark 01)**

A. $x > 0$

B. $3x + 5 < 0$

C. $x + 2 < 0$

D. $x - 2 < 0$

Answer:
D

viii) If $x = 2$ **and** $y = 2x + 1$ **then y is equal to** **(Mark 01)**

A. 2

B. 3

C. 4

D. 5

Answer:
D

ix) Triangle having all sides equal is called **(Mark 01)**

A. Isosceles

B. Scalene

C. Equilateral triangle

D. None of these

Answer:
C

x) A ray has endpoints **(Mark 01)**

A. 2

B. 1

C. 3

D. No end point

Answer:
A

xi) In a parallelogram opposite angles are **(Mark 01)**

A. Congruent

B. Parallel

C. Concurrent

D. Non congruent

Answer:
A

xii) Right angle means angle measure **(Mark 01)**

A. 30^o

B. 60^o

C. 90^o

D. 180^o

Answer:
C

xiii) Symbol used for similarity is **(Mark 01)**

A. ~

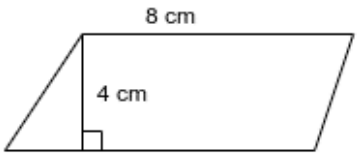
B. ≃

C. =

D. ≈

Answer:
C

xiv) Area of given figure is **(Mark 01)**



A. $4cm^2$

B. $8cm^2$

C. $32cm^2$

D. $12cm^2$

Answer:
C

xv) The medians of a triangle cut each other in the ratio **(Mark 01)**

A. 1 : 4

B. 1 : 2

C. 1 : 3

D. 1 : 4

Answer:
B

Q.2 i) Define scalar matrix **(Marks 02)**

Q.2 iii) Define irrational numbers. **(Marks 02)**
Q.2 iv) Use laws of exponents to simplify $(2x^5y^{-4})(-8x^{-3}y^2)$ **(Marks 02)**
Q.2 v) Express in scientific notation 83,000. **(Marks 02)**
Q.2 vi) Find the value of 'x' $\log_{64}{}^{x}=-2/3$ **(Marks 02)**
Q.2 vii) Define monomial surd **(Marks 02)**
Q.2 viii) If a+b=5, a-b=√17, then find the value of ab. **(Marks 02)**
Q.3 i) Factorize $128am^2-242an^2$ **(Marks 02)**
Q.3 i) Define highest common factor. **(Marks 02)**

Q.3 ii) Solve the equation $\sqrt{x-3}-7=0$ **(Marks 02)**

Q.3 iii) Solve $\frac{1}{2}|3x+2|-4=11$ **(Marks 02)**

Q.3 iv) Find the midpoint between the given pair of points A(3,-11), B(3,-4).
(Marks 02)

Q.3 v) Find the value of m and c of the equation 3-2x+y=0 by expressing it in the form of y=mx+c. **(Marks 02)**
Q.3 vi) Draw the points (-3,-3), (-6,4) on graph paper. **(Marks 02)**
Q.3 vii) Find the distance between the given points (3,-11), (3,-4).
(Marks 02)

Q.3 viii) State SSS postulate. **(Marks 02)**
Q.3 ix) Define parallelogram. **(Marks 02)**
Q.4 i) Define the right bisector of a line segment. **(Marks 02)**
Q.4 ii) 3 cm, 4 cm and 7 cm are not the lengths of the triangle. Give the reason. **(Marks 02)**

Q.4 iii) Define congruent triangles. (Marks 02)

Q.4 iv)Verify that the given measures of sides of a triangle is a right-angled. a=5 cm, b=12 cm, c=13 cm. (Marks 02)

Q.4 v) Define the rectangular region. (Marks 02)

Q.4 vi) Define centroid of a triangle. (Marks 02)

Q.4 viii) Find the value of 'x' in the given figure. (Marks 02)

Q.4 viii) Find the area of the given figure. (Marks 02)

Q.5 a) Solve the following equations by using Cramer's rule.

$3x-2y=1$

$-2x+3y=2$ (Marks 04)

Q.5 b) Simplify (Marks 04)

Q.6 a) Use log tables to find the value of (Marks 04)

Q.6 b) If $x+1/x=8$ then find the value of x^3+1/x^3 (Marks 04)

Q.7 a) Factorize $8x^3+60x^2+150x+125$ (Marks 04)

Q.7 b) Use division method to find the square root of 4x2+12xy+9y2+16x+24y+16 (Marks 04)

Q.8 a) Solve the following equation (Marks 04)

Q.9 a) Prove that any point on the bisector of an angle is equidistant from its arms. (Marks 08)

Q.9 b) Prove that triangles on equal bases and of the same altitude are equal in area. (Marks 08)