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Fill in the Blank (FBQs):

FBQ1: ___ is a small amount or proportion of a whole.

Answer: *Fraction*

FBQ2: Whole numbers are called ___ integer

Answer: *Positive*

FBQ3: Evaluate $(0.001)^{1/3}$ to fraction

Answer: 1/10

FBQ4: Evaluate $(32)^{0.8}$

Answer: *16*

FBQ6: Given the quantity demand and quantity supplied as $q_s = 20 + 3p$ and $q_d = 220 - 5p$ Determine the equilibrium quantity for the market

Answer: *70*

FBQ7: If $27x = 3 - 1/2$, Solve for x ;

Answer: -1/6

FBQ9: A fraction expressed in the unit of hundred is referred to as a ___

Answer: *Percentage*

FBQ10: $1/2$ and $3/4$ are examples of a ___ fraction

Answer: *Proper*

FBQ11: Two well known methods of solving simultaneous equation are ___ and ___ methods

Answer: *Elimination and substitution methods*

FBQ12: a matrix that has the same number of rows and column is known as a ___ matrix

Answer: *Square*

FBQ13: a matrix that has either one row or one column is known as a ___

Answer: *Vector*

FBQ14: ___ is defined as a rectangular array of numbers, parameters or variables

Answer: *Matrix*

FBQ15: The sets of all integers and all fractions form the set of all ___ numbers

Answer: *Rational*

FBQ16: In the linear equation $b = mp + c$, which is the dependent variable?

Answer: *B*

FBQ17: $a = cx^2 + wx + z$ is an example of a ___ equation

Answer: *Quadratic*

FBQ18: ___ can be added or subtracted to form polynomials

Answer: *Monomials*

FBQ19: A set of linear equations in which the numbers of the equations equal the number of unknown is known as a ___ equation

Answer: *Simultaneous*

FBQ20: In the linear equation $z = mw + c$, which is the independent variable?

Answer: *W*

FBQ21: -120 is an example on a/an ___ number

Answer: *Imaginary*

FBQ23: ___ equation is the simplest form of equation.

Answer: *Linear*

FBQ24: Evaluate , $27 - 2/3$

Answer: $1/9$

FBQ25: Solve for y in ; $49y^2 - 36 = 0$

Answer: $-6/7$

FBQ26: Solve for the value of x in; $3x^2 - 7x - 6 = 0$

Answer: $2/3$

FBQ28: Solve for x and y ; $2x + y = 8$; $32x + y = 1/27$

Answer: *0 and 3*

FBQ29: All integers are rational numbers but not all rational numbers are integers. True/False?

Answer: *True*

FBQ30: ___ numbers cannot be placed on the real line.

Answer: *Imaginary*

FBQ31: ___ matrix is a matrix whose determinant is zero

Answer: *Singular*

FBQ32: A mathematical way of expressing number in the simplest form of square roots is known as ___

Answer: *Surd*

FBQ33: Two matrices are said to be equal if they have the same order the same elements, elements occupy the same position and the elements have the same value

Answer: *True*

FBQ34: The 6th and 9th term of a GP are 192 and 1536 respectively. Find the common ratio

Answer: *2*

FBQ35: The 4th and the 7th term of an arithmetic sequence are 6 and 15 respectively. Find the common difference

Answer: *3*

FBQ36: The fifth and eighth terms of an AP are 9 and 27 respectively. Find the first term and the common difference

Answer: *-15 and 6*

FBQ37: At independence, a country's population was put at 57 million. Ten years after independence, it was put at 75 million. What is the average annual increase in the population?

Answer: *2.8%*

FBQ38: $(0.125)^{1+X} = 16$; Find x

Answer: -73

FBQ39: What is the highest common factor in 812

Answer: *4*

FBQ40: Ratios are the same as fraction except that they are not expressed in numerators and denominators. True/False

Answer: *True*

FBQ41: A new set formed through the combination of elements in two or more sets is known as _____

Answer: *Union of sets*

FBQ42: Which is the variable in $7b^3$

Answer: *B*

FBQ43: At independence, a country's population was put at 57 million. Ten years after independence, it was put at 75 million. What is the percentage increase in the population?

Answer: *32%*

FBQ44: Find the LCM of 60, 36 and 24

Answer: *360*

FBQ45: Who is credited to have originated logarithms?

Answer: *Micheal Stifel*

FBQ46: Simplify $\log_3 27$

Answer: *3*

FBQ5: Evaluate, $15/2 - 9/3$

Answer: *4.5*

FBQ8: Given the quantity demand and quantity supplied as $q_s = 20 + 3p$ and $Q_d = 220 - 5p$ Determine the equilibrium quantity for the market

Answer: *70*

FBQ22: ___ are used to describe quantities which are smaller than a whole unit.

Answer: *Fractions*

FBQ4: All integers are rational numbers but not all rational numbers are integers. True/False?

Answer: *true*

FBQ47: A mathematical expression that tells us the equality of one side to the other is known as a/an ___

Answer: *equation*

FBQ48: The coefficient of b in the equation $2a + 3abx$ is ___

Answer: *3ax*

FBQ49: A man bought an article for N50,000 and sold it for N35,000. What is the percentage loss?

Answer: *30%*

FBQ50: A trader bought a product at N100, 000,000 and sold it at N115, 000,000. What is the profit percentage?

Answer: *15%*

Multiple Choice Questions (MCQs):

MCQ1: ___ are the basic quantitative identities used in mathematics, statistics and other related disciplines

Answer: Fraction

MCQ2: The set of all integers, rational and irrational numbers are called

Answer: The real number system

MCQ3: The numbers that cannot be expressed as ratio of a pair of integers form the class of ___

Answer: Rational numbers

MCQ4: The numbers that can be expressed as ratio of a pair of integers form the class of

Answer: Natural numbers

MCQ5: Sometimes zero is referred to as ___.

Answer: Natural number

MCQ6: The set of all positive numbers, negative numbers and neutral number are called
Answer: Rational numbers

MCQ7: The set of positive or negative whole numbers as well as the set of positive or negative fraction, with zero inclusive are called
Answer: Rational numbers

MCQ8: The set of all integers and the set of all fractions together form the set of all
Answer: Rational numbers

MCQ9: $\frac{2}{3}$ is an example of ____?
Answer: Rational number

MCQ10: Which of the following numbers is not an example of irrational number
Answer: $\sqrt{3}$

MCQ11: ____ is a relationship between two or more magnitudes expressed in relative magnitude
Answer: A Ratio

MCQ12: An equation which shows that one ratio is equal to another is called
Answer: Proportion

MCQ13: ____ is a fraction expressed in the unit of hundred
Answer: A Proportion

MCQ14: ____ is a fraction which has its numerator smaller than the denominator
Answer: proper fraction

MCQ15: ____ is a fraction which has its denominator smaller than the numerator
Answer: proper fraction

MCQ16: $\frac{3}{2}$ is an example of ____
Answer: Mixed fraction

MCQ17: Solve for M ;if $M\frac{1}{2} = m/200$
Answer: 50

MCQ18: Bolarinwa starts a job at an annual salary of N800. At the end of each year, his salary increases by 10%. Find his salary during his fourth year in the job.
Answer: N4884

MCQ19: $\frac{1}{2}$ is a fraction that has two portion; the whole number portion and the proper fraction portion
Answer: proper fraction

MCQ20: Solve for x; if $x/3 + 3/2 + 1/4 = 25/12$

Answer: 5

MCQ21: Seun, Okonkwo and Moses decided to go into a joint venture business to produce some products at a large scale. Seun provides $\frac{1}{3}$ of the funds required for the investment. If Okonkwo provides $\frac{2}{3}$ of the remaining, what proportion or fraction of the investment is provided by Moses

Answer: 0

MCQ22: Monday and Sons Limited made total sales of N50, 200 on a certain market day. Of this sales figure, sales of beans accounted for N32, 600. What is the ratio of beans sales to the total sales?

Answer: 2:3

MCQ23: Ade, Olu and Dayo share profits in a partnership business in the ratio 2:5:8. If the total profit realised is N60, 000,000. How much is Olu's share?

Answer: 10,000,000

MCQ24: Ade, Olu and Dayo share profits in a partnership business in the ratio 2:5:8. If the total profit realised is N60, 000,000. How much is Dayo's share?

Answer: 20,000,000

MCQ25: Ade, Olu and Dayo share profits in a partnership business in the ratio 2:5:8. If the total profit realised is N60, 000,000. How much is Ade's share?

Answer: 20,000,000

MCQ26: If 250 labourers are needed to clean up the factory of a certain manufacturing companies having 50 machines. How many labourers will be needed if additional 40 similar machines are required?

Answer: 300

MCQ27: Godwin Industries Ltd earned N100, 000 as return on investment of N500, 000. How much would be earned at the same rate of return on an investment of N50, 000

Answer: 15000

MCQ28: John Coy Limited produces certain products, each of which combines 24kg of lead with 30kg of copper. How many kg of lead will this product combine with 40kg of copper

Answer: 8kg

MCQ29: Matthew and Sons is an oil servicing company. It takes 9 engineers of the company 8 days to complete the servicing of an oil drilling equipment at the rig offshore. How many days will it take 6 engineers to complete the same work if working at the same rate?

Answer: 24 days

MCQ30: For selling an item for N2000 a trader makes a profit of 25%. What should the selling price be to make a profit of 10%?

Answer: 1,050

MCQ31: The equilibrium conditions of two markets, butter and margarine, where P_x and P_y are the prices of butter and margarine respectively, are given as: $8P_x - 3P_y = 7$ and $-P_x + 7P_y = 19$. Find the prices of butter and margarine.

Answer: 3 and 2

MCQ33: Solve for x and y in the following simultaneous equation $2x - y = 8$ and $3x + y = 17$

Answer: 2 and 5

MCQ34: Solve for x and y in the following simultaneous equation $3x + 4y = 12$ and $9x + 2y = 9$

Answer: 4.5 and 2

MCQ35: Solve for x ; $x^2 + 5x + 6 = 0$

Answer: -3 and 2

MCQ36: Solve for y ; $5y^2 + 21y - 20 = 0$

Answer: -5 or $7/2$

MCQ37: Find the quadratic equation whose roots are: $-\frac{1}{2}$ and $3/2$

Answer: $x^2 + 6x - 3$

MCQ38: Which of the following equations is not a perfect squares

Answer: $2x^2 + 8x + 8 = 0$

MCQ40: Which of the following statement is correct if $A = \{2, 3, 5, 7, 11, 13, 17, 19\}$

$B = \{2, 4, 6, 8, 10, 12, 14\}$ $C = \{4, 8, 12\}$

Answer: B is a proper subset of A

MCQ41: Given that $n(X) = 50$, $n(Y) = 63$, $n(X \cap Y) = 90$, $n(X \cup Y) = 5$. Find $n(X \cap Y)$

Answer: 23

MCQ42: In a class of 120 students, 40 speak English Language fluently while 60 speak French language fluently. If 15 students can speak both languages, how many cannot speak either of the languages?

Answer: 45

MCQ43: The first and the last term of an AP are 15 and 300 respectively. Find the sum of the AP, if the AP has 20 terms.

Answer: 1050

MCQ44: An arithmetic sequence has first term as 6 and the common difference of 4. How many terms are needed to make sum equal to 198?

Answer: -11

MCQ45: Find the sum of the first 10 terms of the series $1 + 2 + 4 + 8 + \dots$

Answer: 1024

MCQ46: Mr. Okonkwo is an employee of an engineering firm. His initial annual salary

is N40, 000. If his salary increases by N2,000 annually. In how many years will his salary be N150, 000

Answer: 21yrs

MCQ47: Mr. Adelowo is an employee of engineering firm. His initial annual salary is N40, 000. If his salary increases by N2, 000 annually. If he spends 30 years in service before retirement, what is the cumulative salary he received for the period he served the company?

Answer: N1, 252,500

MCQ48: The population of Nigeria in 2002 was estimated at 183 million people. The population is expected to grow at 3.2% every year. What is the expected population of Nigeria in the year 2020?

Answer: 4,363

MCQ49: Given that; $f(x) = 6x^3 - 3x^2 + x + 7$, $g(x) = 3x^2 + 10x - 4$. Find $f(3) + g(-2)$

Answer: 157

MCQ50: Which of the following is a factor of $x^3 + 3x^2 - 5x - 10$:

Answer: $x-1$

MCQ39: Find the range of values of x that satisfy this inequality $-1 \leq 4x + 15 < 23$

Answer: $-4 \leq x < 2$

MCQ32: The equilibrium

Answer: 3 and 2