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Fill in the Blank (FBQs):

FBQ1: Convert 2710 to another number in base three _____

Answer: *1000 base 3*

FBQ2: Find the length of a chord which subtends an angle of 90o at the centre of a circle whose radius is 8cm, _____

Answer: 82cm

FBQ3: If $\log 4 = 0.6021$, evaluate $\log 41/3$

Answer: *0.2007*

FBQ4: A square tile has side 30cm. how many of these tiles will cover a rectangular floor of length 7.2m and width 4.2m?

Answer: *336*

FBQ5: Solve without using tables $\log_5(62.5) - \log_5(1/2)$, _____

Answer: *3*

FBQ6: If N225.00 yields N27.00 in x-year simple interest at 4% per annum, find x

Answer: *3*

FBQ7: If $x^2+9 = x+1$, solve for x _____

Answer: *4*

FBQ8: In slope-intercept form, the equation of a line passing through the point (-3,2) and parallel to $4x-y=7$ is given as _____.

Answer: *y=4x+4*

FBQ9: A regular polygon has 150o as the size of each interior angle. How many sides has the polygon?,

Answer: *12*

FBQ10: _____ is the principal which amounts to N5,500 at simple interest in 5years at 2% per annum

Answer: *N5,000*

FBQ11: The x intercept of $9x-2y=18$ is _____

Answer: *(3,0)*

FBQ12: A cylindrical tank has a capacity of 3080m^3 . What is the depth of the tank, if the base diameter of the base is 14m _____
 Answer: $*20\text{m}^*$

FBQ13: Simplify $12-312+3$ _____
 Answer: $*1/3^*$

FBQ14: If $\sin \hat{I} = 3/5$, find $\tan \hat{I}$, _____
 Answer: $*3/4^*$

FBQ15: Calculate the logarithm to base 9 of $3-4 \sqrt[3]{92} - (81)^{-1}$, _____
 Answer: $*-2^*$

FBQ16: In triangle XYZ, $\hat{X} = 150^\circ$, $\hat{XZY} = 45^\circ$ and $XY = 7\text{cm}$, find $\sin$ _____
 Answer: 726cm

FBQ17: Find r , if $6r78\hat{A} = \hat{A} 5119$ _____
 Answer: $*3^*$

FBQ18: Express the product of 0.21 and 0.34 _____
 Answer: $*7.14 \sqrt[3]{10^{-2}}^*$

FBQ19: Given that $\log 2 = 0.3010$ and $\log 7 = 0.8451$. evaluate $\log 112$,
 Answer: $*2.0491^*$

FBQ20: If the two smaller sides of a right angle triangle are 4cm and 5cm , find its area
 Answer: $*10 \text{ sq cm}^*$

FBQ21: Find the value of x for which $2(32x-1)=162$,
 Answer: $*5/2^*$

FBQ22: Simplify $\hat{A} \hat{A} \log_2 \square; 8 \log_2 \square; 4$,
 Answer: $*3/2^*$

FBQ23: When a dealer sells a bicycle for N81 he makes a profit of 8%. What did he pay for the bicycle?,
 Answer: $*N75^*$

FBQ24: Write the decimal number 39 to base 2,
 Answer: $*100111^*$

FBQ25: Two distinct sectors in the same circle subtend 1000 and 300 respectively at the centre of the circle. Their corresponding arcs are in the ratio _____
 Answer: $*10:3^*$

FBQ26: A side of a rhombus is 2cm in length. An angle of the rhombus is 60° . What is the length of the diagonal facing the angle _____
 Answer: $*2\text{cm}^*$

FBQ27: Given a regular hexagon, calculate each interior angle of the hexagon _____
Answer: 120°

FBQ28: The Common difference of sequence 5,8,11,14,â€¦ is ____
Answer: 3

FBQ29: One interior angle of a convex hexagon is 170° and each of the remaining angles is equal to x° . Find x , _____
Answer: 110°

FBQ30: A regular polygon of n -sides has 160° as the size of each of interior angle. Find n , _____
Answer: 18

FBQ31: The perimeter of a rectangular lawn is 24cm. if the area is 35 sq cm, how wide is the lawn?
Answer: 5cm

FBQ32: Find the radius of a sphere whose surface area is 154 cm^2 , [$\pi=22/7$],
Answer: 3.5cm

FBQ33: The angle between latitudes 30°S and 13°N is, _____
Answer: 43°

FBQ34: If $\sin x = \cos x$, find x between 0° to 360° ,
Answer: 45°

FBQ35: The area of a circle is _____ cm^2 whose circumference is 44cm,
Answer: 154π

FBQ36: A sector of a circle of radius 14cm has an area of 77cm^2 . Calculate the angle of the sector at the centre,
Answer: 45°

FBQ37: What is the length of a chord drawn 12cm away from the centre of a circle of radius 13cm,
Answer: 10cm

FBQ38: Find an exterior angle of a regular pentagon,
Answer: 72°

FBQ39: Find the hypotenuse of a right-angled triangle of which its shorter sides are 3cm and 4cm respectively,
Answer: 5cm

FBQ40: Calculate the area of an equilateral triangle of side 12cm
Answer: $36\sqrt{3}\text{cm}^2$

FBQ41: What is the length of a diagonal of a square whose area is 242cm^2 ____
Answer: 22cm *

FBQ42: If $\cos \hat{I} = \frac{3}{5}$ find $\tan \hat{I}$,
Answer: $\frac{3}{4}$ *

FBQ43: What is the volume of a cone whose radius is 9cm and height is 21cm,
_____ cm^3
Answer: 2442 *

FBQ44: If $m=3$, $q=2$ and $r=21$ evaluate m^2qr
Answer: $\frac{243}{7}$ *

FBQ45: Simplify $3^{12} \cdot 2^{13} \cdot 12$, _____
Answer: 7^3 *

FBQ46: What is the diagonal of a land measuring 100m by 100m?
Answer: $100\sqrt{2}\text{m}$

FBQ47: The slope of the linear equation $y=12x-2$ is _____
Answer: $\frac{2}{3}$ *

FBQ48: If three people are to share N72 in the ratio of 3:4:5, what is the smallest share?, _____
Answer: $\text{N}18$ *

FBQ49: Convert 2710 to a number in base 4, _____
Answer: 1234 *

FBQ50: If $2n=128$ find the value of n _____
Answer: 7 *

Multiple Choice Questions (MCQs):

MCQ1: The highest in the hierarchy of numbers is _____ numbers
Answer: natural

MCQ2: Pi is an example of _____ number
Answer: irrational

MCQ3: If $6410 = x^5$ find x?
Answer: 223

MCQ4: Convert 173 to base eight
Answer: 24438

MCQ5: Convert 10111012 to denary
Answer: 95

MCQ6: Convert 1345 to denary

Answer: 44

MCQ7: If $202x = 101002$ solve for x

Answer: 5

MCQ8: Find the next term of each sequence 4, 16, 36, 64, 100

Answer: 169

MCQ9: If $35y^{\frac{1}{2}} + 62y^{\frac{1}{2}} = 125y$ and the value of y

Answer: 4

MCQ10: Expand and simplify $(2x - 1)(x + 3)$

Answer: $x^2 + x - 3$

MCQ11: Perform the operation $4^2 + 3^2 - 2^2 - 2^2$

Answer: 52

MCQ12:

Answer: $x^2 - 6x + 9$

MCQ13: Simplify $x^7 \cdot x^3$

Answer: x^{10}

MCQ14: When solving a quadratic equation, you are looking for which of the following?

Answer: Point(s) of intersection

MCQ15: A linear system of equations made up of two intersecting lines has _____ solution(s)

Answer: two

MCQ16: If the legs of a right triangle measure 5 and 12 cm respectively, the measure of the third side is

Answer: 13 cm

MCQ17: Simplify $4^{-2} 3^5$

Answer: $\frac{3^5}{4^2}$

MCQ18: Find the cost of 11 bottles of cough syrup if the cost of 2 dozen of it is N 2520.

Answer: N1155

MCQ19: A quantity of food lasts 5 men for one month (30 days). For how long will it last 6 men, if their rate of eating is the same?

Answer: 25 days

MCQ20: In a class of 60 students, 42 were present. What is the percent attendance?

Answer: 70%

MCQ21: A pharmacist bought a drug for N 375 and sold it for N 420. Find his or her profit or loss percent

Answer: 14%

MCQ22:

Answer: x^{-5}

MCQ23:

Answer: 6

MCQ24:

Answer: 5

MCQ25: Given $y+6x=3$ what is the value of y when $x=1$

Answer: -1

MCQ26:

Answer: -2

MCQ27:

Answer:

MCQ28: An acute angle is an angle whose size is less than

Answer: 90°

MCQ29: Find the length of the arc of a circle of radius 7cm, which subtends an angle of 60° at the center of the circle. (Take $\pi=227$)

Answer: 253cm

MCQ30: Find the angle subtended at the centre of a circle radius 6.2cm by an arc of length 12cm. (Take $\pi=227$)

Answer: 10.85°

MCQ31: The square root of a number is the same as raising the number to the

Answer: $(1/2)$ power

MCQ32: Find the circumference of a circle of radius 10cm. Take $\pi = 3.142$

Answer: 62.84cm

MCQ33: Find the circumference and area of the circle of radius 12cm. (Take $\pi=227$)

Answer: 75.4cm and 42.58cm²

MCQ34: A sector is cut out of a circle of radius 21 cm. Find the length of arc. (Take $\pi=227$)

Answer: 60cm

MCQ35: A sector is cut out of a circle of radius 21 cm. Find the area of this sector, if the sector subtends an angle of 120° . (Take $\pi=227$)

Answer: 463cm²

MCQ36: Find the perimeter of a semicircle of radius 12.3cm. Take $\pi = 3.142$

Answer: 6.25cm

MCQ37: A Cuboid is 10cm long, 8cm wide and 7cm high. Find the total surface area of the Cuboid

Answer: 412cm²

MCQ38: Find the volume of a 12.5cm by 10.5cm by 8.5cm box

Answer: 115.625cm³

MCQ39: If $\log_7 \square_i x = 2$

Answer: 49

MCQ40: Evaluate $\log_{10} \square_i 0$

Answer: 1

MCQ41: Simplify the following $\log_a \square_i x^2 + 3\log_a \square_i x - 2\log_a \square_i 4x$

Answer: $\log_a \square_i x^2$

MCQ42: Solve the following for x: $2\log_a \square_i x - \log_a \square_i (x-1) = \log_a \square_i (x-1)$

Answer: 23

MCQ43: Simplify $8x - 3\sqrt{3x^2} - 4$

Answer: $2x^2$

MCQ44: Simplify $2a^3b^2 \cdot a^2b^6 - ab^2$

Answer: a^2

MCQ45: The diameter of the base of a cylinder is 12 cm and the height is 8 cm. Find the surface area of the solid cylinder

Answer: 528 cm²

MCQ46: The ages of Isa and Adamu differ by 6 and the product of their ages is 187. Write their ages in the form (x,y) where $x \geq y$.

Answer: (12,6)

MCQ47: Find n if, $\log_2 \square_i 4 + \log_2 \square_i 7 + \log_2 \square_i n = 1$

Answer: 28

MCQ48: If $5x + 2y = 5$ and $4x + 3y = 16$, find $3x + y$

Answer: 0

MCQ49: If the population of a town was 240,000 in January 1998 and it increased by 2% each year, what would be the population in 2000?

Answer: 480,000

MCQ50: If $m = 3$, $p = -3$, $q = 7$ and $r = \frac{5}{2}$, evaluate $m(p+q+r)$

Answer: 19