Math-n-Coding Tech Competition (MCTC) – 2021

Syllabus
Group 1

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1. Number System

The number system or the numeral system is the system of naming or representing numbers. It is composed of the ten symbols {0, 1, 2, 3, 4, 5, 6, 7, 8, and 9}.

Includes

Addition, Subtraction, Division, Multiplication, Positive/Negative Numbers, Fractions etc.

Example 1

Question - Find the missing number. 3 +____= 3

A) 2
B) 3
C) 1
D) 0

Answer – **D**

3 + 0 = 3. Adding zero to a number gives number itself.

Example 2

Question – If 3 x 4 = 12; 12 ÷ 4 =?

A) 3
B) 4
C) 12
D) 8

Answer – **A**

2. Measuring Units

A measurement unit is a standard quantity used to express a physical quantity. A unit is any measurement that there is 1 of.

Includes

Length, Weight, Capacity (Volume), Time, Area, Temperature and others…

Example 1

Question – One kilometer is equal to how many miles?

A) 0.84
B) 0.50
C) 0.62
D) 1.60

Answer – **C**

Example 2

Question – Which choice in metric unit's best represents the length of a ruler?

A) 30 meters
B) 30 millimeters
C) 10 centimeters
D) 30 centimeters

Answer – **D**

The choice in metric units that best represents the length of a ruler is 30 centimeters.

3. Time & Work

In math, time can be defined as the ongoing and continuous sequence of events that occur in succession, from the past through the present to the future.

Time is a used to quantify, measure or compare the duration of events or the intervals between them, and even, sequence events.

Example 1

Question – How many quarter minutes does the second hand of a clock complete to travel through from 6:15 p.m. to 6:18 p.m.?

A) 4
B) 8
C) 12
D) 16

Answer – **C**

Example 2

Question – What time is it 3 hours before 4:40 a.m.?

A) 1:40 a.m.
B) 7:40 a.m.
C) 1:40 p.m.
D) 7:40 p.m.

Answer – **A**

4. Basic Patterns

A pattern is a series or sequence that repeats. Math Patterns are sequences that repeat based on a rule, and a rule is a set way to calculate or solve a problem.

Example 1

Question – What will come next 24, 20, 16, 12, ____?

A) 8
B) 10
C) 9
D) 11

Answer – **A**

Example 2

Question – What should be subtracted from each number of the pattern? Choose the correct option. 15, 13, 11, 9, ____ 20, 17, 14, 11, ____ 25, 20, 15, 10, ____ 50, 40, 30, 20, ____

A) 7, 7, 15, 20
B) 7, 8, 15, 20
C) 7, 8, 5, 10
D) 7, 8, 16, 10

Answer – **C**

Solution:

15 - 2 = 13, 13 - 2 = 11, 11? 2 = 9, 9 - 2 = 7 20? 3 = 17, 17? 3 = 14, 14? 3 = 11, 11? 3 = 8 25? 5 = 20, 20? 5 = 15, 15? 5 =10, 10? 5 = 5 50? 10 = 40, 40 - 10 = 30, 30? 10 = 20, 20? 10 = 10

5. Comparing Quantities

In math, to compare means to examine the differences between numbers, quantities or values to decide if it is greater than, smaller than or equal to another quantity.

Example 1

Question – The price of a motorcycle was Rs. 34,000 last year. It has increased by 20% this year. The price of motorcycle now is: _____

A) Rs. 36,000
B) Rs. 38,800
C) Rs. 40,800
D) Rs. 32,000

Answer – **C**

Explanation:
20% of Rs. 34,000 = 20 / 100 x 34,000 = Rs. 6,800
New price = Rs. 34,000 + Rs. 6,800 = Rs. 40,800

Example 2

Question – The ratio of 10 km per hour to 30 km per hour is _____

A) 3:1
B) 1:2
C) 2:1
D) 1:3

Answer – **D**

Explanation: 10:30 = 1:3

Start Competing, Start Succeeding!

A complete MCTC program is designed with the technique that emphasizes on basic mathematics and light coding concepts, principles and real time scenarios.

We choose basic fundamental topics for this competition like general math, quantitative aptitude, logical reasoning and fundamentals of programming etc.

Most of the topics are from your regular syllabus, so you don't need to do separate preparation for this exam and that is the beauty of this competition…

Students knows mathematics and computer science better than most adults. It has become the easiest way they learn, because it is such an integral part of their life.

The students of this generation are considered technological learners. They learn best being more interactive, and technology is what helps them do that.

In case of any query, please feel free to share your valuable inputs on events@fabsoftwarestock.com

Thank you!