Bighelp For Education

Math Bee Contest - 2018

Level– Senior (7th& 8th grade)

A Catalyst For Better Education In India

Score Card

Name of the student   : _____

Parent's cell phone# : _____

Student Grade :   _____

For the use of Math bee coordinator ONLY:

Section A&B Score   : _____

Section C Score   : _____

Total Score   : _____

Section-A:-   (15 questions –Multiple Choice)

Circle the correct answers for the following questions 1 - 15:-

1)   Nick's family ordered a 12-slice pizza for dinner. Nick ate one slice and shared another slice equally with his brother Harsha. What fraction of the pizza did Nick eat?

a) 1/8   b) 1/6   c) 1/12   d) 1/4

2)   The Indian statistical Institute estimated that there is a baby born every 8hours and a death every day in an Indian city, Amaravati. How many people are added to the population of Amaravati each year?

A)650   B)730   C)810   D)960

3)   A group of 74 people saw either the movie "Bahubali-I" or the movie "Bahubali-II" or both in a special show at Worcester, MA. Fifty-six people saw the first movie while Thirty-Nine saw the second. How many people saw both the movies in special show?
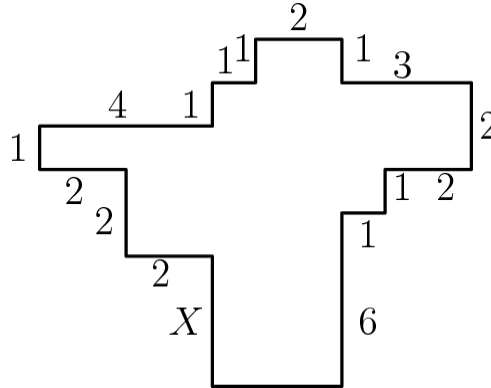

A) 21   B) 23   C)15   D) 17

4)In Shrewsbury town of 351 adults, every adult owns a car, motorcycle, or both. If 331adults' own cars and 45 adults' own motorcycles, how many of the car owners do not own a motorcycle?

A) 126   B) 215   C) 351   D) 306

5) In the diagram, all angles are right angles and the lengths of the sides are given in centimeters. Note the diagram is not drawn to scale. What is the value of x in centimeters?
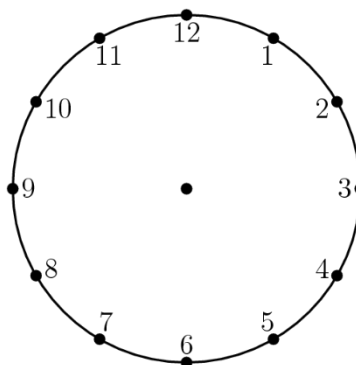

A) 6   B) 4   C) 5   D) 3

6) Let W, X, Y and Z be whole numbers. If $2^w \cdot 3^x \cdot 5^y \cdot 7^z = 588$,
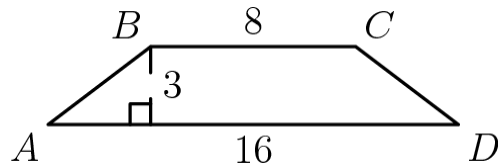
then what does $2w + 3x + 5y + 7z$ equal to?

A) 21   B) 25   C) 27   D) 35

7) What is the degree measure of the smaller angle formed by the hands of a clock at 10 o'clock?

A) 30   B) 60   C) 45   D) 10

8) In trapezoid $ABCD$, the sides AB and CD are equal. The perimeter of $ABCD$ is

A) 34   B) 27   C) 32   D) 48

9)If $a \otimes b = \dfrac{a+b}{a-b}$, then $(6 \otimes 4) \otimes 3 =$

a) 1   b) 2   c) 3   d) 4
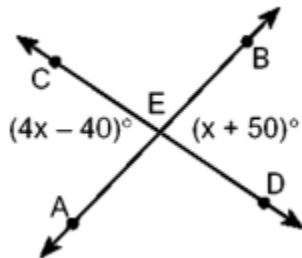
10) How many diagonals can be drawn in a decagon?

a) 10   b) 25   c) 15   d) 35

11)AB and CD are intersecting lines. Find the value of the angle $\mathbf{m\angle\ AEC}$.
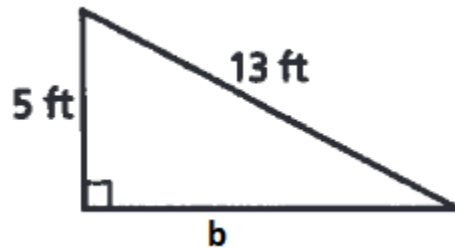

A) 80   B) 30   C) 40   D) 60

12) The measures of complementary angles are represented by

X + 5 and **4X − 15.** Find the value of variable X?

A) 20   B) 40   C) 80   D) 100

13) Mallik has a triangular garden, as shown in the diagram below.What is the length, in feet, of the side b?
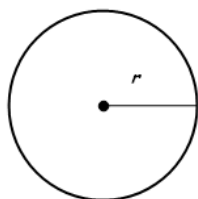

A) 13.75 ft   B) 10 ft   C) 14 ft   D) 12 ft

14)   Simplify the given expression below?

$$\frac{7.2 \times 10^{-3}}{4.8 \times 10^{7}} \times \left(3 \times 10^{12}\right)$$

A) 450   B) 4500   C) 550   D) 5500

15)   The circle below has a circumference of **24**π feet. How many square feet are in the area of the circle? Write answer in terms of π.

a)   **100**π b) **324**π c) **24**π d) **144**π

Section -B: (10 Questions - Fill in the blanks)

Fill in the blank with the correct answerfor questions 16- 25

16) What is the average of the four different prime factors of 1365?

Answer :_____

17) The ratio of my current age to my age six years ago is 5 : 3. How many years old will I be in 17 years?

Answer :_____years

18) Find the number of two-digit positive integers whose digits total 7.

Answer : _____ .

19) Sabinamade 22cookies, which is 55% of her total cookies. How many cookies are the 75% of the total cookies she made?

Answer : _____

20) If Set A = {multiples of 4 between 0 and 170} and Set B = {multiples of 6 between 0 and 170}. How many numbers are in the intersection of sets A and B?

Answer : _____

21) If $(X + 7)(5X - 2) = ax2 + bx + c$, then what is the value of $a + b + c$?

Answer : _____

22)A cube has a volume of 1331 cubic yards. How many square yards are in the total surface area?

Answer : _____square yards.

23) A cube and a rectangular solid have the same volume. The dimensions of the rectangular solid are 12cm by 18cm by 125cm. How many square centimeters are in the area of <u>one</u> surface (face) of the cube?

Answer: _____square cm.

24) How many ways can six books be arranged on a book shelf that has space for exactly six books?
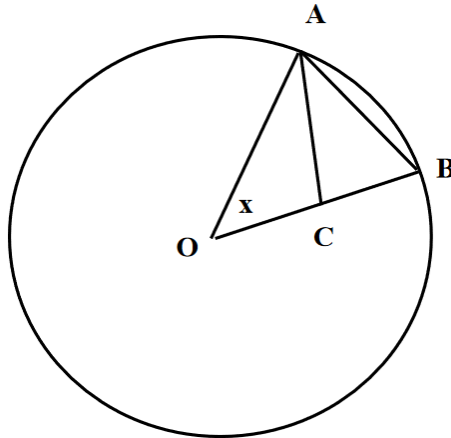
Answer: _____ways.

25) Nikki has a pocketful of Skittles candies: 17 yellow, 28 red, 31 blue, and 8 green. If she reaches into her pocket and selects one at random, what is the probability that she will choose a red one? Simplify and express your answer as a common fraction.

Answer :_____.

Section-C :- (5 Questions)

Solve the problems 26-30 & write the answer in the blank provided:

26)Circle O has points A and B on its circumference, as shown. OC = AC = AB. What is the value of **x** if it is the measure, in degrees, of angle AOC?
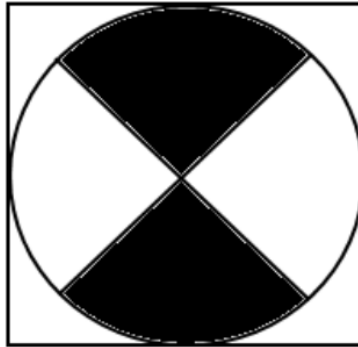

Answer:_____degrees.

27) Of the 460 kids at the Westboro school Diwali celebrations, 30% ate Samosa and 75% ate Pakodi. Of the kids who ate Samosa, 65 of them also ate Pakodi. How many of the 460 kids ate neither Samosa nor Pakodi?

Answer: _____

28) What is the probability that a point that lies within this square is also in the shaded area? The circle is tangent to the square (touching it on all sides) and the circle is divided into four equal sectors. Express your answer as a percent, rounded to the nearest whole percent.

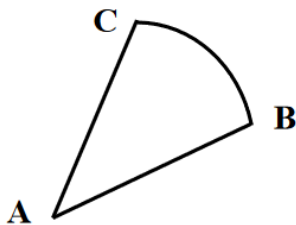**Answer:** _____ %.

29) In the multiplication to the right,
- ❖ A, B, and C are different digits,
- ❖ A B is a two-digit number,
- ❖ 1 C B is a three-digit number,
- ❖ no digit is zero, and
- ❖ A < B < C.

$$\begin{array}{r} \mathbf{A\ B} \\ \times\ \ \ \mathbf{B} \\ \hline \mathbf{1\ C\ B} \end{array}$$

What is the value of B?

Answer:_____

30)A Sector ABC consists of radii AB and AC and arc BC as shown. Arc BC measures 36 degrees. How many centimeters are in the perimeter of the sector? Use pi = 3.14 and AB = 10 cm.

Note: Round your answer to the nearest hundredth of a centimeter.

Answer:_____Cm.

Level 6 Answer Key:

Number	Level 6 (Grade 7-8)
1	A
2	B
3	A
4	D
5	C
6	A
7	B
8	A
9	D
10	D
11	A
12	A
13	D
14	A
15	D
16	7
17	32
18	7
19	30
20	14
21	SUM = 24
22	726
23	900 SQ. CM
24	720
25	Fraction: 1/3
26	36
27	42
28	39%
29	6
30	26.28