Bighelp For Education

Math Bee Contest - BARC 2015

Level – 6 (7th & 8th grade)

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Score Card

Name of the student : _____

Parent's cell phone# : _____

Student Grade :_____

Center : Waltham / Canton / Westborough

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)   Find the values of X for the following equation?

$$|2x - 7| = 19$$

    a) -6, -13   b) 6, 13   c) -6, 13   d) 6, -13

2)   If 17 is the first term of the sequence shown below, find the value of the 8th term.
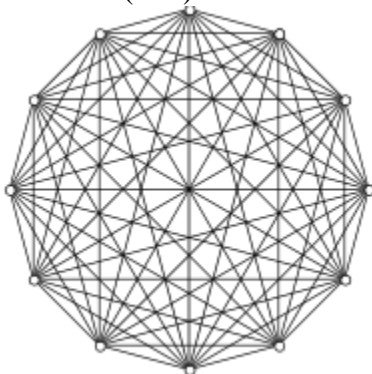
       17, 20, 26, 35, 47, …

Other options are not practical and everyone can guess 101. Since the sequence might not be more than 3 digit.

    A) 101   B) 102   C) 99   D) 113

3)   Find the value of the following?
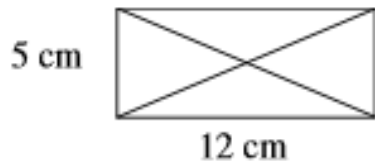
$$87\frac{1}{2}\% \text{ of } \frac{5}{7} \text{ of } 25\% \text{ of } \frac{4}{9} \text{ of } 720?$$

    A) 50   B) 320   C) 72   D) 10

4) What is the maximum number of diagonals that can be drawn in the dodecagon shown below? N(N-3)/2

    A) 154   B) 78   C) 66   D) 54

5) How many centimeters are in the distance from a corner to the center of a rectangle shown below whose dimensions are 12 cm by 5 cm rectangle?

5 cm

12 cm

     A) 13 cm   B) 6.5 cm   C) 26.5 cm   D) 17 cm

6) Find the value of the variable X in the following equations
$3(X - 2) + 5 = 2(5x - 4)$?

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

7) If $2^x = 20$, then what is the value of 2^{x+3}?

     A) 120   B) 60   C) 180   D) 160

8) An exterior angle of a regular polygon measures 15 degrees. How many sides does the polygon have?

     A) 15   B) 24   C) 12   D) 42

9) How many positive whole numbers between 202 and 2002 are divisible by 6, 5, and 4?

     a) 15   b) 24   c) 30   d) 25

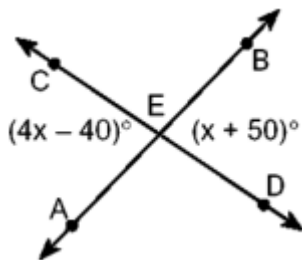**10)** Solve algebraically for X in the following sentence?

$$16^{2x+3} = 64^{x+2}$$

    a) 6   b) 0   c) 3   d) 1

11) If the ratio of the corresponding sides of two similar triangles is 3:5, the ratio of the areas of these triangles is

    a) 3:5   b) 9:25   c) 27:125   d) $\sqrt{3} : \sqrt{5}$

12) AB and CD are intersecting lines. Find the value of the angle m$\angle$ AEC.

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

13) How much larger is

$$37\frac{1}{2}\% \text{ of } 96 \text{ than } \frac{5}{12} \text{ of } 84$$

    A) 5   B) 4   C) 2   D) 1

14)   The measures of supplementary angles are represented by

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

A) 20   B) 38   C) 152   D) 43

15)   The roots of the equation $x^2 - 14x + 48 = 0$ are

a) -6 and -8   b) -6 and 8   c) 6 and -8   d) 6 and 8

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

Fill in the blank with the correct answer for questions 16– 25

16) Solve the following expression

$$\sqrt[5]{72 \times \sqrt{9^3} \times \sqrt[3]{8^2}}$$

Answer :_____

17) An interior angle of a regular polygon is five times as great as an exterior angle on the same regular polygon. How many sides does the polygon have?
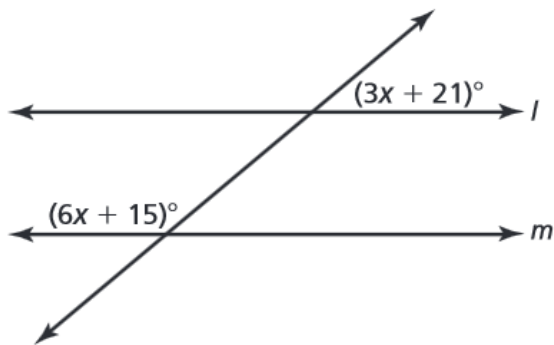
Answer :_____

18) A vendor sells 'Mango Bites' for $1.25 each and 'Samosas' for $2.00 each. One day he sold 82 items for a total of $134.75. How many 'Mango Bites' did he sell?

Answer : _____ Mango Bites

19) The length of a rectangle is nine units longer than the width of the rectangle and the perimeter of the rectangle is 42 units. Find the number of square units in the Area of the rectangle?

Answer : _____ Square Units

20) In the diagram below, the line l and m are parallel. Find the value of the Angle X ?

Answer : _____

21) What is the greatest common factor (GCF) of the following terms?

$$12x \text{ and } (3x^2 + 6x)$$

Answer : _____

22) The average of two whole numbers is 18 and their product is 308. What is the positive difference between the two numbers?

X^2 – 36x + 308 = 0 is not solvable for whole numbers

Answer : _____

**23)** If f(x) = 2x – 1 and g(x) = 3x + 5, then (fog)(x) is equal to

Answer: _____

24) The average score on the first two tests that Melissa took was 88. On the third tests she received a score of 94. What was her average for the three tests?

Answer: _____ .

25) An isosceles triangle has sides measuring 34 units, 34 units and 32 units. If the 32-unit side is considered the base. How many units are in the height (or the altitude) of this triangle?

34 units   34 units

32 units
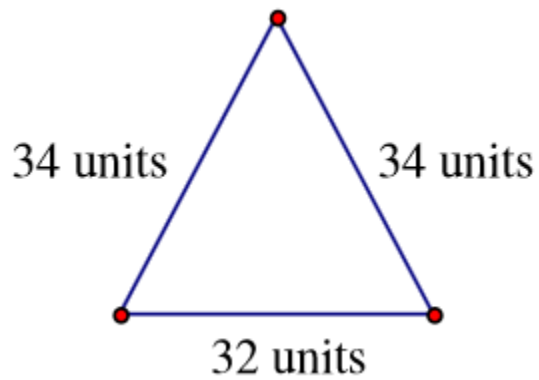
Answer : _____ units.

_____

Section-C :- (5 Questions)

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

26) Give the lesser of the two solutions to the following equation?

$$x(7+x)+312-4x=3(x+137)+526$$

Answer: _____

27) The price of a bicycle is increased by 30% then put on sale for 40% off. At the time of purchase a 5% tax is added on. If the final of the bicycle is $204.75. what was the original price before any of the three changes?

Answer: _____

28) A fake function is defined as: **S ♣ K = S² + K²**.
Find the value of a natural number B for which: **B ♣ (2 ♣ 4) = 10 ♣ 20**?

Answer: _____.

_____

29) Find the positive value of A using the below 5 equations?

$$A^2 = 92 - B$$
$$B = C + 5$$
$$2C = \frac{D}{4}$$
$$D = 3E^4$$
$$E^5 = 32$$

Answer: _____

30) Find the value of **2(A + B)** for the following equations

$$\frac{A+1}{B-1} = \frac{5}{6} \text{ and } \frac{A-1}{B-1} = \frac{3}{4}$$

Answer:_____.