CalcuSolve

2019

Scoring

There will be seven Individual Questions. You will be given 5 minutes to earn 5 points for a correct answer on each Individual Question.

OR

You may wait for a clue, work an extra 2 minutes and earn 3 points for a correct answer on each Individual Question.

There will be two Group Questions. Your team of students will be given 10 minutes to earn 10 points for a correct answer on each Group Question.

Good Morning & Welcome to the Brentwood 2019 CalcuSolve Competition!

We hope you have a challenging and successful day!

While we are waiting for all the teams to arrive, please:

1. Sit at the table to which you were assigned.
2. Each person on your team should take one stapled packet of individual answer sheets and complete all the information on EVERY sheet. Print neatly! Your team letter is displayed on the sign at your table.
3. Work on the *Math Warm-ups* that are in your folder.
4. If you need help or further direction, see Mrs. Anderson, Ms. Hagerty, or Ms. Downey.

Relax, Have Fun, and Good Luck!

Round #1 Group Question

Gabriella is making friendship bracelets. She buys a package of cord that is 12 yds long.

For each bracelet, she needs a piece of cord that is 1/2 of a foot.

If she makes 18 bracelets, what fraction of the package of cord did she use? You must write your answer as a unit fraction/in simplest form.

Round #1 Group Question Solution

Answer: She used ¼ of the cord.

Each bracelet is 1/2 ft or 6 in.

18 bracelets would use 9 ft of cord or 3 yds of cord.

She uses 3 out of 12 yards of cord.

3/12 simplifies to 1/4

Round #2 Individual Question

Tori's class is reading the new Wings of Fire book. Their teacher, who loves puzzles, tells the class that they left off yesterday on the page on the left. If you open the book and look at the two pages, the page numbers added together equal 285.

What page did they leave off on?

Round #2 Individual Question Hint

Hint: The even numbered page is on the left.

Round #2 Individual Question Answer

Answer: They left off on page 142.

Find 2 consecutive numbers that add up to 285: 142 and 143.
The even numbered page is on the left in a book.

Round #3 Individual Question

A Mystery Number is multiplied by 9. Then, 19 is added to one third of the product. Next that sum is divided by 4. The quotient of that problem is 10.

What was the original Mystery Number?

Round #3 Individual Question Hint

Hint: Work backwards and make a chart to help you.

Round #3 Individual Question Answer

Answer: The original mystery number is 7.

Work backwards:

10 x 4 = 40

40-19= 21

21 is 1/3 of 63

63 ÷ 9 = 7

Starting with 7:

7 x 9 = 63

1/3 of 63 = 21

21 + 19 = 40

40 ÷ 4 = 10

Round #4 Individual Question

Tom and Mary are cooking breakfast for a fundraiser. They are serving egg, bagel, and bacon sandwiches. In each package of eggs there are 18 eggs, bagels come in packages of 6, and bacon comes in packages of 15. They use one egg, one bagel, and one piece of bacon for each sandwich.

What is the least number of packages of each that can be bought to make egg sandwiches with no bagels, eggs, or bacon left over?

Round #4 Individual Question Hint

Hint: You need at least 5 packages of each.

Round #4 Individual Question Answer

Answer: 5 packages of eggs, 15 packages of bagels, and 6 packages of bacon.

Eggs: Find the Multiples of 18:
18, 36, 54, 72, **90**, 108
Bagels: Find the Multiples of 6
6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, **90**, 96
Bacon: Find the Multiple of 15
15, 30, 45, 60, 75, **90**, 108

What is the smallest multiple they have in common? 90.

For the eggs, divide 90 by 18 = 5 packages
For the bagels, divide 90 by 6 = 15 packages
For the bacon, divide 90 by 15 = 6 packages

Round #5 Individual Question

At Kennywood on Tuesday, there are 3 children who rode the Phantom's Revenge for every 5 children who did not.
There were 448 children at Kennywood that day.

What is the difference between the total number of children who rode the Phantom's Revenge on Tuesday versus those who did not?

Round #5 Individual Question Hint

Hint: If there were 16 children at the park that day, 6 children would have ridden the Phantom's Revenge.

Round #5 Individual Question Answer

Answer: The difference is 112 children.

For every 8 children, 3 will ride the Phantom's Revenge and 5 will not.

Out of 448 children, there are 56 groups of 8 children.

3 x 56 = 168 children who ride the Phantom's Revenge.
5 x 56 = 280 children do not ride the Phantom's Revenge.

280-168 = 112 children more did not ride Phantom's Revenge than did.

Round #6 Individual Question

At his summer camp, Sushil shot 5 arrows at a target. All 5 arrows landed on the target. He had a total score of 104.

The numbers on the target were:
15, 17, 18, 23, 29, 35

What numbers did Sushil land on to get a total score of 104?

Round #6 Individual Question Hint

Hint: an arrow could land on the same number on the target more than once.

Round #6 Individual Question Answer

Answer: 17,17, 18, 23, 29

OR

23, 23, 23, 17, 18

Use guess and check

17 + 17 + 18 +23 + 29 = 104 points

23 + 23 + 23 + 17 + 18= 104 points

Round #7 Individual Question

Marcus enters a chess tournament.
There are 64 players to start the tournament.
After a player loses, he or she is eliminated from the tournament.
The winner goes on to the next round.
Play continues this way until there is only 1 winner.

How many games are played during the tournament?

Round #7 Individual Question Hint

Hint: If there were 12 players to start the tournament, there would be 6 players left at the end of the first round.

Round #7 Individual Question Answer

Answer: 63 games

Round	1	2	3	4	5	6
Players	64	32	16	8	4	2
Games	32	16	8	4	2	1

32 + 16 + 8 + 4 + 2 + 1 = 63 games

Round #8 Individual Question

Jayla programs her robot to travel forward 100 cm from a starting point of 0 cm.

Next, she programs it to go backwards 3/4 of a meter.

Then, it moves forward 5 cm.

Next, she programs it to move 1/5 of a meter back to the start.

Then, it moves forward five times its current distance.

How many more cm does it need to travel to get to the 100 cm mark?

Round #8 Individual Question Hint

Hint: There are 100 cm in 1 m

Round #8 Individual Question Answer

Answer: The robot has to move 40 cm.

Start	Change	End
0 cm	Moves100 cm forward	100 cm
100 cm	Moves backwards ¾ of a meter (75 cm)	25 cm
25 cm	Moves forward 5 cm	30 cm
30 cm	Moves backwards 1/5 of a meter (20 cm)	10 cm
10 cm	Moves forward 5 times its current location (50 cm)	60 cm

The robot ends at 60 cm, it has to move 40 cm more to get to 100 cm.

Round #9 Group Question

Jose builds a garden in the shape of an equilateral triangle. He uses 33 ft of wood and a gate that is 36 in to fully enclose the garden.

He also makes a rectangular shaped garden. The shorter side of the rectangular garden is the same length as one of the sides of the triangular garden. The area of the rectangular garden is 240 ft2.

How many feet longer is the perimeter of the rectangular garden than the perimeter of the triangular garden?

Round #9 Group Question Answer

Answer: 28 feet

Perimeter of the triangular garden = 36 ft, each side = 12 ft (equilateral triangle)

Rectangular garden – short side is 12 ft, long side is 20 ft (240 ÷ 12 = 20)

Perimeter of rectangular garden is 64 ft.

64 ft – 36 ft = 28 ft