"The Nine Chapters on the Mathematical Art" Contest (NCC) 2024©

Student Name:

Please write your name on *every* page.

Section C

C1

A bucket filled with water weighs 600 grams. When the bucket is half full, it weighs 350g. What is the weight of the bucket?

Answer to C1: _____

C2

Pete is baking apple pies. If each pie takes 3 apples to make, and each of Pete's apple trees produces 8 apples, when harvested, how many apple trees must Pete harvest in order to make 30 pies?

Answer to C2: _____

С3

January 1st 2024 is a Monday. How many days after January 1st is it until another month starts on a Monday. (Reminder: 2024 is a leap year!)

Answer to C3: _____

C4

Terry is walking to school. It takes him 30 minutes to walk to school. Halfway to school, there is a bus stop, where a bus arrives at 8:15, 8:30 and 8:45. It takes 5 minutes for the bus to drive from the stop to the school. Between 8:00 and 9:00, how many minutes is it faster for Terry to walk to school rather than taking the bus?

Answer to C4: _____

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C5

Finn is going shopping at the mall. He buys a pair of Jeans that are 20% off. Sales tax is currently 20%. If the jeans end up costing \$50, and the discount was applied before the tax, what was the original value of the undiscounted jeans?

Answer to C5: _____

C6

An apartment floor has 42 rooms in a 7 by 6 room layout. Every room on the edge of the apartment has windows facing outside. How many rooms have windows facing the outside?

Answer to C6: _____

C7

How many scalene triangles with perimeter of 12 can be created?

Answer to C7: _____

C8

There are 100 people in Gerald's math class, and each student has a unique numerical grade from 1-100 after the midterm. Gerald starts above the median grade. However, after 25 students drop the course upon seeing their midterm grade, Gerald is now below the median grade. What is the difference between the highest and lowest grade Gerald could have had?

Answer to C8: _____