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3 Section C

C1

A sequence has terms beginning with $1, 3, 5, \ldots$, and each term is 2 larger than the term before it. What is the 10th term in the sequence?

Answer to C1: _____

C2

In a video game, there are 8 worlds. Each world has 10 levels, and each level has 3 stars to collect. What is the minimum number of worlds you need to have visited in order to collect at least 100 stars?

Answer to C2: _____

C3

The following table is a list of buses that someone can take to the mall, with the departure and arrival times.

Departure	Arrival
9:43	10:01
9:37	9:59
9:35	9:54
9:49	10:10

What is the shortest time that a bus takes to reach the mall?

Answer to C3: _____

C4

Which two numbers from 1 and 9 (not including 1), when multiplied by themselves, have a product that ends in themselves?

Answer to C4: _____

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C5

A magic square has each number from 1 to 9 in a cell exactly once, and every row, column, and diagonal sums to the same value. If

8	1	6
3		
		?

is a magic square that is partially filled in, what number replaces the question mark?

Answer to C5: _____

C6

A weekend day is a Saturday or a Sunday. If the month of December has 31 days, and the first day of the month is a Thursday, how many weekend days are there in December?

Answer to C6: _____

C7

If 23 is divided by a one digit number, what is the maximum possible product of the quotient and remainder?

Answer to C7: _____

C8

Brock and Perrin are playing a game. The expression

$4 + 3 \times 2 - 4 + 5 \times 6 \div 2 - 1$

is written on a chalkboard. Brock goes first by placing a left bracket immediately before a number somewhere in the expression, and then Perrin places a right bracket somewhere immediately to the right of a different number somewhere in the expression, and it must be after the left bracket so that the expression makes sense. For example, Brock could place a left bracket before the second 4 to make

$4 + 3 \times 2 - (4 + 5 \times 6 \div 2 - 1$

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and then Perrin could place a right bracket after the 6 to make

$4 + 3 \times 2 - (4 + 5 \times 6) \div 2 - 1$

The new expression is then evaluated. In this case, it equals -8.

Brock wants the new expression to be as high as possible and Perrin wants it to be as low as possible. Assuming both players know this and play with perfect strategy, what number does the new expression end up equalling?

Answer to C8: _____