## 13. Section 4: Puzzles

There are 100 light bulbs lined up in a row in a long room numbered consecutively from 1 to 100. Each bulb has its own switch and is currently switched off. There are 100 students lined outside the room numbered consecutively from 1 to 100. student 1enters and changes the state of switch of every bulb (turns every bulb on) and exits. student 2 enters and changes the state of switch of every second bulb (turns off 2,4,6...). Student 3 enters and flips the switch on every third bulb (changing the state on bulbs 3,6,9...). This continues until all 100 students have passed through the room. how many bulbs are illuminated after the 100th student has passed the room?

Pick **ONE** option

- 10
- 18
- 26
- 42

Clear Selection

## 14. Section 4: Puzzles

Let $f(x) = ax^2 + bx + c$, be a quadratic polynomial with integer coefficients a,b,c belonging to set {0, 1, ... , 33}. Assume f(40) = 2020, what is f(2020)?

Pick **ONE** option

- 4000000
- 4100620
- 4100640
- 4001060

Clear Selection

## 15. Section 4: Puzzles

An infection spreads among the squares of an 8x8 chessboard in the following manner: If a square has two or more related neighbors infected, it becomes infected itself. (Each square has 4 neighbors). Given that you can choose to infect specific square, what is the minimum number of initial infections required to infect the whole chessboard?

Pick **ONE** option

- 4
- 8
- 32
- None of the above

Clear Selection

## 16. Section 4: Puzzles

There are 100 statements.

1st one says: at least one is wrong.
2nd one says: at least two are wrong.
3rd one says: at least three are wrong.
...
100th one says: at least 100 are wrong.

How many statements are actually wrong and how many are actually right?

Pick **ONE** option

- 50
- 51
- 49
- 7

Clear Selection

Continue