

## Section A

### A1

What is  $2017 - 2000$ ?

**Solution.** In the place value system, 2017 means  $2000 + 10 + 7$ . If we take away the 2000, what is left is 17.

Answer to A1: 17

### A2

It takes 3 days for a single car to drive from Vancouver to Halifax. If 3 cars depart Vancouver for Halifax at the same time, how long (in days) will it be until they all get to Halifax?

**Solution.** This is a trick question. If you think about it, 3 cars take the same time as 1 car, because they're all driving at the same time. So the answer is 3 days.

Answer to A2: 3

### A3

There are 48 tourists in a group. Each of them speaks one of Swahili or Bengali, but not both. If 16 people speak Swahili, how many tourists speak Bengali?

**Solution.** We compute

$$48 - 16 = 32$$

people that can speak Bengali.

Answer to A3: 32

### A4

A pie is cut into 10 slices and split equally between 5 people. How many slices does each person get?

**Solution.** 10 divided by 5 is 2, so each person gets 2 slices.

Answer to A4: 2

**A5**

There are 8 people at a picnic and each person has 8 loaves of bread. How many loaves of bread are there in total?

**Solution.** There are  $8 \times 8 = 64$  loaves of bread in total.

Answer to A5: 64

**A6**

Including both 22 and 30, how many even numbers are there between 22 and 30?

**Solution.** The right computation here is  $(30 - 22)/2 + 1 = 4 + 1 = 5$ .

Answer to A6: 5

**A7**

The symbol  $>$  means “greater than”; that is, the number on the left is bigger than the number on the right. For example,  $10 > 5$ .

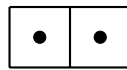
True or false:  $1532 > 1352$ . (Write true or false on the answer line.)

**Solution.**  $1532 > 1352$  is true. When we compare numbers, we always compare them starting from the left. The numbers both start with 1, so that’s a tie. However, in the second digit, 5 is larger than 3. So 1532 is greater than 1352.

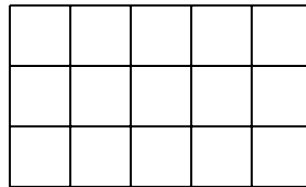
Answer to A7: True

**A8**

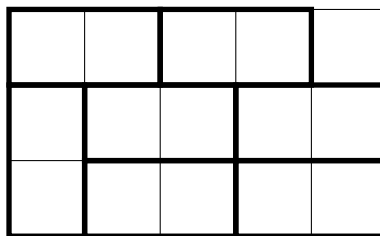
This is a domino. It is a  $1 \times 2$  block which can be rotated vertically or horizontally.



What is the maximum number of dominoes that you fit on this grid, without any going off the grid and without any of them overlapping?



**Solution.** By trial-and-error, the maximum number of dominoes that can be placed without going off the grid and without overlaps is 7. For example, here’s a possible solution:



Note that 7 is best possible, because the grid only has 15 squares. (If we could place 8 dominoes, then they would cover  $8 \times 2 = 16$  squares.)

Answer to A8: 7