2023 Grade One Spirit of Math Contest Solutions

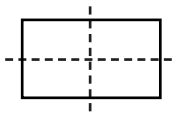
1) **C** Regroup the numbers to make the calculation easier:
$2 + 8 + 4 + 6$
$= 10 + 10$
$= 20$

2) **B** The day before Thursday is Wednesday.

3) **B** Max had 13 flowers and gave 3 to his mom.
Max has $13 - 3 = 10$ flowers left.

4) **C** Since the hour hand points to 3 and the minute hand points to 12, it is 3:00.

5) **A** The rectangle has 2 lines of symmetry.



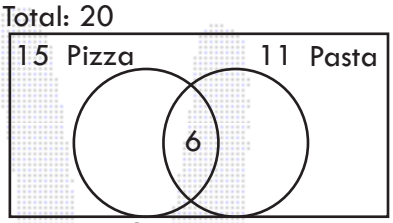
6) **C** Since $2 + 2 + 2 + 2 + 2 = 10$, this is the same as $5 + 5 = 10$.

7) **A** Since Xavier is 12 and Carl is half his age, then Carl is $12 \div 2 = 6$ years old.

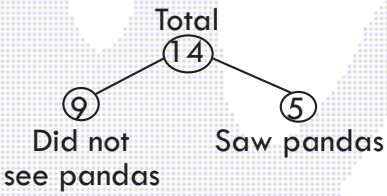
8) **B** Each new term is created by adding three to the previous number. Therefore, the next term is $18 + 3 = 21$.

9) **B** To get 8 pieces of sushi, Felix needs to make 7 parallel cuts.

10) **A** There are 20 poeple in total. However, when you add the 15 people who ordered pizza and 11 people who ordered pasta, it gives a total of 26. This means $26 - 20 = 6$ people were counted twice. Six people ordered both pizza and pasta.



11) **B** Rephrase the question: "All of them saw the pandas, except 9 who did not see the pandas." Therefore, 9 students did not see the pandas.

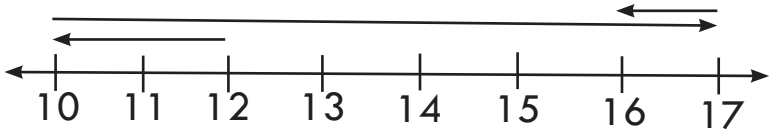


12) **C** Tanya has the one that is not the boat (the train), therefore the other one is the boat.

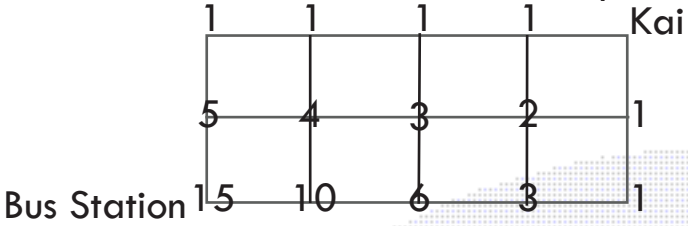
13) **B** Mrs. Baker must take groups of 6 cupcakes to make a full box. If there are 20 cupcakes, Mrs. Baker can package 3 full boxes of cupcakes with 6 cupcakes, and one box with only 2 cupcakes: $6 + 6 + 6 + 2 = 20$

14) **C** Since Bugs was born later in the year (August), he would be the first youngest bunny. Then the second youngest bunny would be Peter who is born in June. Buster and Roger were both born in the first month of the year (January). However, Buster was born on a later date in January, which makes Roger the eldest bunny. Therefore the order of the the bunnies from youngest to oldest is; Bugs, Peter, Buster and Roger.

15) **B** Work backwards from October 12th: two days before is October October 10th, seven days after October 10th is October 17th, and one day before October 17th is October 16th. Samir's school trip is on October 16th. This can also be shown on a number line:



16) **D** Starting from Kai and going to the bus station, the route follows a 2x4 grid. As shown below, count the paths to each intersection going south (down) and west (left). Each intersection is the sum of the two preceding intersections. Therefore there are 15 different pathways.

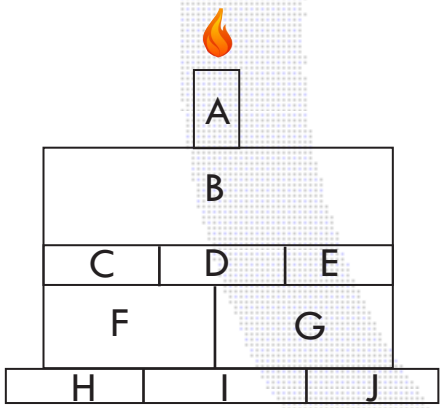


17) **C** The first and last digits of the passcode is 7, since it is a prime number that has a sum of 14: 7 + 7 = 14. The middle digit is 4 since it is double 2: 2 + 2 = 4. Therefore, the passcode is 747.

18) **C** Sullivan collected 1 sticker in January, 2 in February, 3 in March, 4 in April, 5 in May, 6 in June, 7 in July, 8 in August and 9 in September. 1 + 2 +... + 9 = 45 stickers in total.

19) **B** A) "How many blocks are there?" is given in the question.
B) "What is the order of the blocks?" is the first logical question you should ask to help solve the problem.
C) "Which block is the smallest?" does not help to solve the question.
D) "Which block is at the bottom?" is given in the question.

20) **B** Label each region in the diagram. Make a chart to help you count the rectangles.



# of Letters	Rectangle Name	# of Rectangles
1	A, B, C, D, E, F, G, H, I, J	10
2	CD, DE, FG, HI, IJ	5
3	CDE, HIJ	2
4	BCDE	1
5	CDEFG	1
6	BCDEFG	1
	Total:	20