2023 Grade Two Spirit of Math Contest Solutions
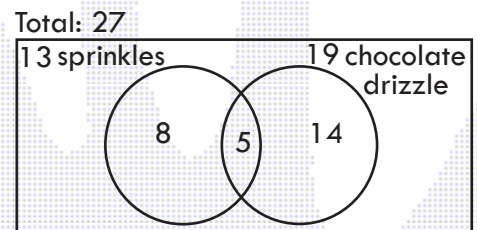
1) **C**   Regroup the numbers to make the calculation easier:
$2 + 8 + 3 + 7 + 4 + 6$
$= 10 + 10 + 10$
$= 30$

2) **A**   By checking the graph, June has the least number of rainy days with only two rainy days in the month.

3) **D**   Since $8 - 4 = 4$, this is the same as $8 - 2 - 2 = 4$.

4) **A**   If today is Thursday, one week (7 days) from today would be Thursday. The day after Thursday is Friday, therefore the tennis match is on Friday.

5) **C**   The palindrome that reads the same forward and backward is 787.

6) **D**   One day is 24 hours long, and since they have been chewing gum for two days, it took them $24 + 24 = 48$ hours.

7) **C**   Rephrase the question: "All of the mice got away, except 4 who did not get away." Therefore, $90 - 4 = 86$ mice got away.

8) **D**   Each of the 11 animals has at least two legs, so $11 \times 2 = 22$ legs that are accounted for. There are $30 - 22 = 8$ legs left, which must belong to the sheep. Two more legs must be added to each sheep, so there are $8 \div 2 = 4$ sheep. If there are 11 animals and 4 were sheep, Farmer Danimal saw $11 - 4 = 7$ chickens.

9) **C**   There are 12 cookies in total. If you divide the total number of cookies in half, this will ensure that both Stella and Jamal have the same amount, therefore there are $12 \div 2 = 6$ cookies on each plate.

10) **B**   There are $13 + 19 = 32$ donuts with sprinkles or chocolate drizzle, but there are only 27 donuts in the box. So, $32 - 27 = 5$ donuts were counted twice. Therefore, 5 donuts have both sprinkles and chocolate drizzle.

Total: 27
13 sprinkles   19 chocolate drizzle
8   5   14

11) **B**   The movie started when the hour hand is at 5 and the minute hand is at 3, which is 5:15. The movie ended when the hour hand is at 7 and the minute hand is at 12, which is 7:00. From 5:15 to 6:15 is one hour (60 minutes) and from 6:15 to 7:00 is 45 minutes. Therefore, the movie was $60 + 45 = 105$ minutes long.

12) **A**   Each of the six people shook hands with 5 friends. That is $6 \times 5 = 30$ handshakes. However, each handshake has been counted twice, so the total is $30 \div 2 = 15$ handshakes.
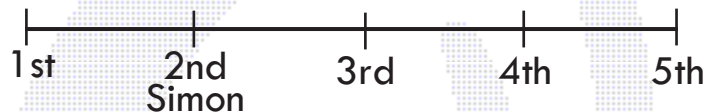
13) **C**

Posts not painted	Posts painted
1, 2, 3 ... 6	7, 8, 9 ... 22

Ayesha started painting post 7 all the way up to post 22. She did not paint posts 1 to 6. From post 7 to 22, there are $22 - 6 = 16$ posts painted.
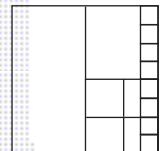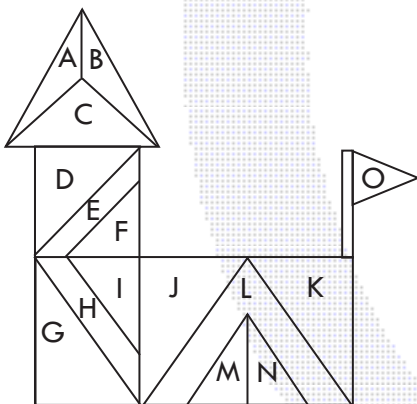
14) **B**   A) "How big is the closet?" does not help solve the question.
B) "What is a dozen?" is the first logical question you should ask to help solve the problem.
C) "How many pairs of shoes are in the closet?" is already asked in the question.
D) "Are there more blue shoes than white shoes?" does not help solve the problem.

15) **D**   Dividing the number of crayons in half first would give each box the same number of 6 crayons. If Grace starts moving each crayon from one box to another, she will have 7 and 5 crayons, then 8 and 4 crayons. Finally, she will have 9 and 3 crayons in each box. Therefore, there are 3 crayons in the small box and 9 crayons in the larger box because the larger box has three times as many crayons as the small box.

16) **C**   Five 10-cent coins is $10 + 10 + 10 + 10 + 10 = 50$ cents.
Five 25-cent coins is $25 + 25 + 25 + 25 + 25 = 125$ cents.
Therefore, $50 + 125 = 175$ cents or $\$1.75$.

17) **A**   Since Gordon planted 15 seeds, there will be 14 spaces in between the first seed and the last seed. Each space is 2 metres apart so the path is 14 spaces $\times$ 2 metres $= 28$ metres long.

18) **C**   If Simon came in second place, there was 1 person in front of him. Since he also came fourth from last place, there were 3 people behind him. Therefore, there were 5 people who took part in the race.

1st	2nd Simon	3rd	4th	5th

19) **B**   The length of the largest square is 8 of the smallest squares, as shown in the diagram. Therefore, the length of the largest square is 8 units.

20) **D**   Label each region of the diagram and make a chart to help you count.

# of Letters	Triangle Names	# of Triangles
1	A, B, C, D, F, G, I, J, K, M, N, O	12
2	EF, FI, HI, MN	4
3	ABC, HIJ, LMN	3
4	EFHI	1
	Total:	20