

# Algebra and Functions for Primary Grades (1 - 2)

## Answer Key and Scoring Guide

<u>Item</u>	<u>Value</u>	<u>Answer</u>
1.	(1 point)	D
2.	(1 point)	Students must write an equation, not an expression. It should be written in horizontal format. Possible answers are: $9 - 5 = 4$ $9 - 4 = 5$ $4 + 5 = 9$ $5 + 4 = 9$ $9 - \square = 5$ $5 + \square = 9$ It may <b>not</b> be an expression (e.g. 9-5) or the answer (4).
3.	(1 point)	B
4.	(1 point)	B
5.	(1-2 points)	<b>Score of 1</b> (first section) 19 and 22 written in the blanks. <b>Score of 1</b> (second section) written answer must reflect the rule of +3, though it may be phrased differently. Some possible answers: Count by threes; adding three; skip two. <b>Score of 0</b> for: skipping 3; it goes odd even; I used my fingers; I just did it in my head.
6.	(1-3 points)	The purpose of this question is to assess the student's ability to <i>interpret</i> the graph, not just read off the numbers. Responses need to show that students see this graph as a representation of students' choices of favorite recess games. One point is given for each correct statement about the graph, with a maximum of 3 points for this item. Sample responses: <b>Score of 1</b> for responses such as: <ul style="list-style-type: none"><li>• How much people like to play the game.</li><li>• I know that people like to play handball.</li><li>• Six people are playing handball.</li><li>• There are 15 kids in the class.</li><li>• 2 more voted for tetherball than tag.</li></ul> <b>Score of 0</b> for responses such as: <ul style="list-style-type: none"><li>• Handball is bigger than tetherball, tag, and dodgeball.</li><li>• Tag is smaller than dodgeball and smaller than handball.</li><li>• That handball is winning.</li><li>• That handball is best, tag is okay, tetherball is fun, and dodgeball is worse!</li><li>• It has tall lines and shorter lines they are black.</li></ul>

- For students who give vague answers that **may** show some understanding, give 1 point for the entire answer, e.g.
  - Handball is most. Tag is least.
  - Handball has 6, tag has 2. Tetherball has 4 and dodgeball has 3.

**Sample scoring** of actual student responses–

It tells me that how children like the activity. (1 point)

A lot of children like handball. (1 point)

A little children like tag. (1 point)

Half the children like handball. (0 points)

A lot of children like dodgeball. (0 points) Total = 3 points

6 children like handball. (1 point)

2 students like tag. (1 point)

4 voted for tetherball. (1 point)

3 voted for dodgeball.(1 point)

Total = 3 points. (3 is the maximum)

The least number of people like to play tag. (1 point)

Two more people like to play dodgeball than tag. (0 points)

Three people like to play tetherball. (0 points) Total = 1 point

7. (1 point)

Students write 9 in the box.

8. (1 point)

**Score of 1** for answer that reflects the rule of +2, though it may be phrased differently.

Some possible answers:

- Count by twos
- Adding two
- Skip one

**Score of one-half point** if the student shows some level of understanding, for example:

- 2
- If its 3 it will come out 5 because 3 4 5.
- The rowrs [rule] is 2

**Score of 0** for:

- skipping 2
- they are both even
- it goes 3-5, 6-8, and 7-9,
- I used my fingers
- I just did it in my head.

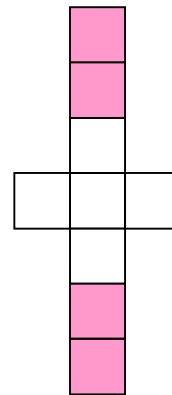
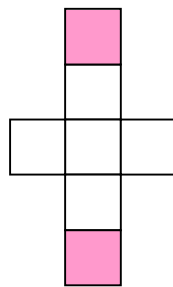
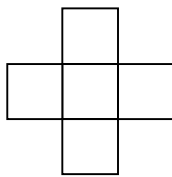
9. (1- 2 points) **Score of 2** given for a story that shows a form of subtraction (take away, comparison, or making equal groups), uses the numbers 11 and 9 and ends with an appropriate question. **Score of 1** given if the story shows subtraction, but the question is vague or the numbers have been reversed. **Score of 0** given if it does not reflect subtraction or the numbers are incorrect.

**Sample scoring** of actual student responses-

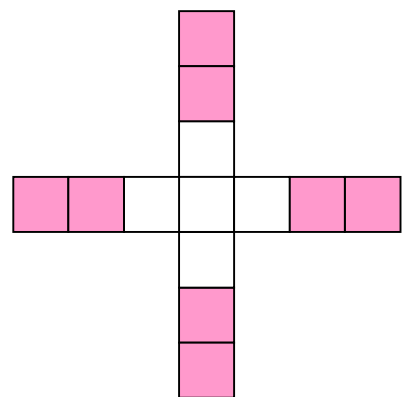
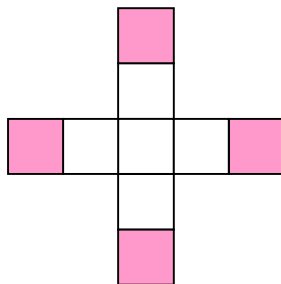
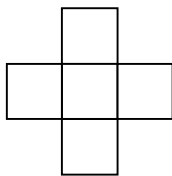
- I had 9 cookies and my friend has 11. How many more does he have? (2 points)
- Andrea had 11 candys Tyler had 9 candys. I said what is 11-9? (1 point)
- Christopher Wu had 11 books. He lost 2. How many are left? (1 point)
- There are 11 boys in a party 9 boys went home. There are 2 more boys at the party now? (1 point)
- Ch-lok had 11 coxe and David had 9 coxe how meay cox is leuft? (0 points)

10. (1- 2 points) Student gets one point for each term in the pattern (boxes b and c). Student must make the pattern grow by adding squares that touch the existing design. The pattern must be consistent for each term.

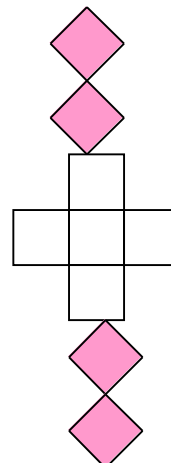
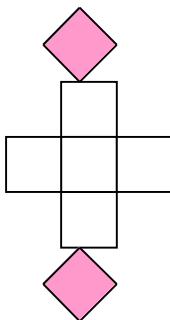
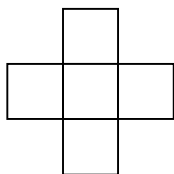
**Score of 2** for consistent growing patterns, e.g.



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**Score of 1** can be given if student completes only one figure correctly.

**Score of 0** for patterns that do not grow.

11. (1 point) Student writes how many squares would be in the next term, following the pattern s/he has created. If there is no consistent growth in the pattern, no points are given.
12. (1-2 points) Students must write about how their pattern grew. To get two points students must tell how they made the pattern grow *and* tell how the numbers make a pattern.

**Sample scoring** of actual student responses-

- It makes a pattern of counting by 5's- 5, 10,15, and the next ones would go 20, 25,30. I just copied the shape so it is repeated. The first one has two shapes next to each other and the next one has 3 shapes next together. The next one would have 4. That makes 20 squares. (2 points)
- I added 4 each time. 1 to the top, 1 on the bottom and 1 on the sides. It goes 5,9. The next one is 13. (2 points)
- I added one to each side. One on the top then one on the sides. (1 point)
- It looks like a big bird. I added lots to make it grow. I like my design. (0 points)