



TIMO practice: Ways to line up (with solutions)

8 problems · Grade 1, 3 · answers and solutions at the end

Name _____

Date _____



Practise this type in the Karotto app, with questions read aloud and hints when stuck. Scan the code or visit playkarotto.com

Grade 1

- 1 There are three friends: fox, bear cub, piglet. They stand in a line. How many different ways can they line up?



Answer: _____

- 2 There are three friends: fox, piglet, frog. They stand in a line. How many different ways can they line up?



Answer: _____

- 3 There are three friends: frog, chick, bunny. They stand in a line, and the frog is always at the front. How many ways can they line up?



Answer: _____

- 4 There are three friends: frog, kitten, chick. They stand in a line. How many different ways can they line up?



Answer: _____

Grade 3

- 5 There are four friends: piglet, bear cub, fox, frog. They stand in a line, and the frog and the bear cub always stand next to each other. How many ways can they line up?



Answer: _____

- 6 A flag has 3 stripes. Color each stripe, all in different colors, choosing from 4 colors. How many ways are there?



Answer: _____

- 7 A flag has 3 stripes. Color each stripe, all in different colors, choosing from 3 colors. How many ways are there?



Answer: _____

- 8 A flag has 3 stripes. Color each stripe, all in different colors, choosing from 3 colors. How many ways are there?



Answer: _____

Answers and solutions: Ways to line up

1. Answer: 6 · Grade 1

How to think: Choose who stands first, then who stands second, and so on to the last one.

Solution: For each friend at the front, the other two can stand 2 ways. 3 friends can be at the front: 2 plus 2 plus 2 equals 6 ways.

2. Answer: 6 · Grade 1

How to think: Choose who stands first, then who stands second, and so on to the last one.

Solution: For each friend at the front, the other two can stand 2 ways. 3 friends can be at the front: 2 plus 2 plus 2 equals 6 ways.

3. Answer: 2 · Grade 1

How to think: The frog is already at the front. Only the other two friends need places behind.

Solution: The frog is at the front, and the other two can swap places: 2 ways.

4. Answer: 6 · Grade 1

How to think: Choose who stands first, then who stands second, and so on to the last one.

Solution: For each friend at the front, the other two can stand 2 ways. 3 friends can be at the front: 2 plus 2 plus 2 equals 6 ways.

5. Answer: 12 · Grade 3

How to think: Think of the frog and the bear cub as one friend stuck together. Now there are only 3 parts to arrange.

Solution: 3 parts can be arranged in 3 times 2 times 1 equals 6 ways. In each one, the frog and the bear cub can swap in 2 ways: 6 times 2 equals 12 ways.

6. Answer: 24 · Grade 3

How to think: Color the first stripe, then the second stripe in a different color, then the third.

Solution: Multiply the color choices for each stripe: 4 times 3 times 2 equals 24 ways.

7. Answer: 6 · Grade 3

How to think: Color the first stripe, then the second stripe in a different color, then the third.

Solution: Multiply the color choices for each stripe: 3 times 2 times 1 equals 6 ways.

8. Answer: 6 · Grade 3

How to think: Color the first stripe, then the second stripe in a different color, then the third.

Solution: Multiply the color choices for each stripe: 3 times 2 times 1 equals 6 ways.
