



TIMO practice: Sure even when unlucky (with solutions)

4 problems · Grade 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 3

- 1 A box has 6 red marbles, 5 blue marbles and 2 yellow marbles. Without looking, at least how many marbles must you take out to be sure to have all 3 colours?



Answer: _____

- 2 A box has 10 red marbles, 12 blue marbles and 3 yellow marbles. Without looking, at least how many marbles must you take out to be sure to have all 3 colours?



Answer: _____

- 3 A box has 4 red marbles, 2 blue marbles and 5 yellow marbles. Without looking, at least how many marbles must you take out to be sure to have all 3 colours?



Answer: _____

- 4 A box has 3 red marbles, 14 blue marbles and 2 yellow marbles. Without looking, at least how many marbles must you take out to be sure to have all 3 colours?



Answer: _____

Answers and solutions: Sure even when unlucky

1. Answer: 12 · Grade 3

How to think: Think of the unluckiest case: the marbles you take out are never the ones you want.

Solution: The unluckiest case is taking all of the two biggest colours first: 6 plus 5 equals 11 marbles, and one colour is still missing. The next marble must be the last colour: 11 plus 1 equals 12.

2. Answer: 23 · Grade 3

How to think: Think of the unluckiest case: the marbles you take out are never the ones you want.

Solution: The unluckiest case is taking all of the two biggest colours first: 12 plus 10 equals 22 marbles, and one colour is still missing. The next marble must be the last colour: 22 plus 1 equals 23.

3. Answer: 10 · Grade 3

How to think: Think of the unluckiest case: the marbles you take out are never the ones you want.

Solution: The unluckiest case is taking all of the two biggest colours first: 5 plus 4 equals 9 marbles, and one colour is still missing. The next marble must be the last colour: 9 plus 1 equals 10.

4. Answer: 18 · Grade 3

How to think: Think of the unluckiest case: the marbles you take out are never the ones you want.

Solution: The unluckiest case is taking all of the two biggest colours first: 14 plus 3 equals 17 marbles, and one colour is still missing. The next marble must be the last colour: 17 plus 1 equals 18.
