Grade 7 Math – Writing Algebraic Expressions

Exercise A: Write an algebraic expression for the following number sequences

1. 2, 4, 6, 8, 10,… \[2n\]
2. 7, 10, 13, 16,… \[3n + 4\]
3. 5, 6, 7, 8, 9,… \[n + 4\]
4. 3, 5, 7, 9, 11,… \[2n + 1\]
5. 10, 15, 20, 25,… \[5n + 5\]
6. 16, 36, 56, 76,… \[20n – 4\]

Exercise B: Write an algebraic equation for the following statements

1. 10 less than a number is 5 \[n – 10 = 5\]
2. 2 less than a number is 4 \[n – 2 = 4\]
3. The sum of 8 and a number is 12 \[n + 8 = 12\]
4. A number plus 11 is equal to 14 \[n + 11 = 14\]
5. A number n divided by 7 is 2 \[n ÷ 7 = 2\]
6. A number n times 11 is 22 \[11n = 22\]
7. Seven less than a number n is 14 \[n – 7 = 14\]
8. Fourteen is the difference between a number and seven \[n – 7 = 14\]
Mrs. Mitra is holding a competition between the two Grade 7 classes. She wants to see if Ms. Lau’s class is able to collect more tabs than Ms. Chang’s class.

- On the first day, Ms. Lau’s class has 21 tabs and Ms. Chang’s class has 5 tabs.
- On the second day, Ms. Lau’s class has 22 tabs and Ms. Chang’s class has 8 tabs.
- On the third day, Ms. Lau’s class has 23 tabs and Ms. Chang’s class has 11 tabs.

Write an algebraic expression that describes the number of tabs that Ms. Lau’s class collected each day.

\[ n + 20 \]

Write an algebraic expression that describes the number of tabs that Ms. Chang’s class collected each day.

\[ 3n + 2 \]

Graph the two algebraic expressions below. Use one colour for Ms. Lau’s class and another colour for Ms. Chang’s class. Remember to give your graph a title and label the x-axis and y-axis.

According to your graph, which class won the competition? Please explain your answer.

It depends on how long the competition is. If the competition is shorter than 10 days, then Miss Lau’s class won. If the competition is longer than 10 days, then Ms. Chang’s class won. If the competition is 10 days long, then the two classes are tied.