Lesson 2: Linear and Nonlinear Expressions in x

Classwork

Exercises

Write each of the following statements in Exercises 1–12 as a mathematical expression. State whether or not the expression is linear or nonlinear. If it is nonlinear, then explain why.

1. The sum of a number and four times the number

2. The product of five and a number

3. Multiply six and the reciprocal of the quotient of a number and seven.

4. Twice a number subtracted from four times a number, added to 15

5. The square of the sum of six and a number

6. The cube of a positive number divided by the square of the same positive number

7. The sum of four consecutive numbers

8. Four subtracted from the reciprocal of a number

9. Half of the product of a number multiplied by itself three times

10. The sum that shows how many pages Maria read if she read 45 pages of a book yesterday and $\frac{2}{3}$ of the remaining pages today

11. An admission fee of $10 plus an additional $2 per game

12. Five more than four times a number and then twice that sum

Problem Set

Write each of the following statements as a mathematical expression. State whether the expression is linear or nonlinear. If it is nonlinear, then explain why.

1. A number decreased by three squared

2. The quotient of two and a number, subtracted from seventeen

3. The sum of thirteen and twice a number

4. 5.2 more than the product of seven and a number

5. The sum that represents the number of tickets sold if 35 tickets were sold Monday, half of the remaining tickets were sold on Tuesday, and 14 tickets were sold on Wednesday

6. The product of 19 and a number, subtracted from the reciprocal of the number cubed

7. The product of 15 and a number, and then the product multiplied by itself four times

8. A number increased by five and then divided by two

9. Eight times the result of subtracting three from a number

10. The sum of twice a number and four times a number subtracted from the number squared

11. One-third of the result of three times a number that is increased by 12

12. Five times the sum of one-half and a number

13. Three-fourths of a number multiplied by seven

14. The sum of a number and negative three, multiplied by the number

15. The square of the difference between a number and 10