Practice Exercises on Factoring by Grouping

A. Representing Quantities

Convert each statement into algebraic expressions. One point each.

1. The sum of a positive number and its square is 12.
2. The length of a rectangular piece of paper is 8 cm more than its width.
3. The square of a number equals 7 times that number.
4. The ages of two children are consecutive odd integers.
5. The cube of a number equals 11 times that number.

B. Problem Solving

Solve each problem completely. Write the final answers only. One point each.

1. A rectangular lot is 8 meters longer than it is wide. The area of the lot is 65 squares meters. Find the length of the lot.
2. The square of a positive number equals 10 times that number. Find the number.
3. The ages of two children are consecutive even integers. If the product of their ages is 80, how old is the younger child?
4. Find two odd consecutive integers whose product is 143.
5. The sum of a positive number and its square is 90. Find the number.
6. The length of a rectangular piece of paper is 11 cm more than its width. Its area is 42 square centimeters. How long is the piece of paper?
7. A rectangular lot is 4 meters longer than its width. The area of the lot is 77 square meters. Find the length of the lot.
8. The square of a positive number equals 5 times that number. Find the number.
9. The ages of two children are consecutive even integers. If the product of their ages is 120. How old is the younger child?
10. Find two consecutive odd integers whose product is 99.

Answer Key

A. Representing Quantities

1. $x^2 + x = 12$
2. $l = w + 8$
3. $x^2 = 7x$
4. x and $x + 2$
5. $x^3 = 11x$

B. Problem Solving

1. 13 meters
2. 10
3. 8 years old
4. 11 and 13
5. 9
6. 14 cm
7. 11 m
8. 5
9. 10 years old
10. 9 and 11