5.10 Introduction to Equations

Chapter 5: Introduction to Algebra

Name: _____ Date: _____ Class/Period: _____

Problem 5.173 Is $x = 5$ a solution of $2x + 1 = 11$?

Problem 5.174 Is $x = -4$ a solution of $3x - 2 = -10$?

Problem 5.175 Is $n = 6$ a solution of $n^2 = 36$?

Problem 5.176 Classify $4a + 7$ as an expression or equation.

Problem 5.177 Classify $4a + 7 = 31$ as an expression or equation.

Problem 5.178 Write an equation for "a number plus 8 equals 20."

Problem 5.179 Write an equation for "five times a number is 45."

Problem 5.180 From $x + 12 = 30$, subtract 12 from both sides.

Problem 5.181 From $7x = 56$, divide both sides by 7.

Problem 5.182 Explain why adding 4 only to the left side changes the solutions.

Problem 5.183 Give two equations equivalent to $x = 9$.

Problem 5.184 Write a false numerical equation and a true numerical equation.

Problem 5.185 A box and 9 identical counters balance 31 counters. Write an equation for the number b in the box and solve by describing a balance operation.

Problem 5.186 Find which of $-2, -1, 0, 1, 2$ satisfy $x^2 + x = 2$.

Problem 5.187 A student changes $4x + 3 = 19$ to $4x = 19 - 3$. Explain the legal operation hidden by this shorthand.

Problem 5.188 Explain why multiplying both sides of $a = b$ by -1 preserves equality even though every sign changes.