ALGEBRA 1 Name_____

1-4 PRACTICE:

PROPERTIES OF REAL NUMBERS

Name the property illustrated by each statement.

1. $(2 \cdot 5) \cdot 6 = 2 \cdot (5 \cdot 6)$ _____

2. $\frac{7}{9} \cdot 1 = \frac{7}{9}$ _____

3. $h + 0 = h$ _____

4. $389 \cdot 0 = 0$ _____

5. $27 \cdot x = x \cdot 27$ _____

6. $9(-1 \cdot x) = 9(-x)$ _____

7. $-\frac{2}{3} \cdot -\frac{3}{2} = 1$ _____

8. $(a + 3) + 2 = a + (3 + 2)$ _____

9. $(a + 3) + 2 = 2 + (a + 3)$ _____

10. $2(a + 3) = 2a + 6$ _____

Simplify each expression. Justify each step.

11. $8 + (9x + 4)$

12. $\frac{33xy}{3x}$

Use deductive reasoning to tell whether each statement is true or false. If it is false, give a counter example.

13. For all real numbers r, s, and t, $(r \cdot s) \cdot t = t \cdot (r \cdot s)$.

14. For all real numbers p and q, $p \div q = q \div p$.

15. For all real numbers x, $x + 0 = x$.

16. For all real numbers a and b, $-a \cdot b = a \cdot (-b)$.

Tell whether the expressions in each pair are equivalent. Show why.

17. $(3 + 7) + m$ ***and*** $m + 10$

18. $(9 - 7) + \pi$ ***and*** 2π

Show how to use mental math to simplify.

19. $10 \cdot 2 \cdot 9 \cdot 5$

20. $55.3 + 0.2 + 23.8 + 0.7$