Name: _____

Grade 8: Algebra Readiness Summer Assignment
Show all work on separate sheet of paper. NO CALCULATORS – Teachers will expect you to know how to compute with all numbers without a calculator.

Section 1
Evaluate the expression for *n* = 2, *m* = 3, and *t* = 5.

1. $3t - 4n$ **2.** $13 - (m + n)$

Compare. Write < , =, or >.

3. -7 __ 7 **4.** 32 __ |-32| **5.** |-9 | __ -3 **6.** |-8| __ |-6|

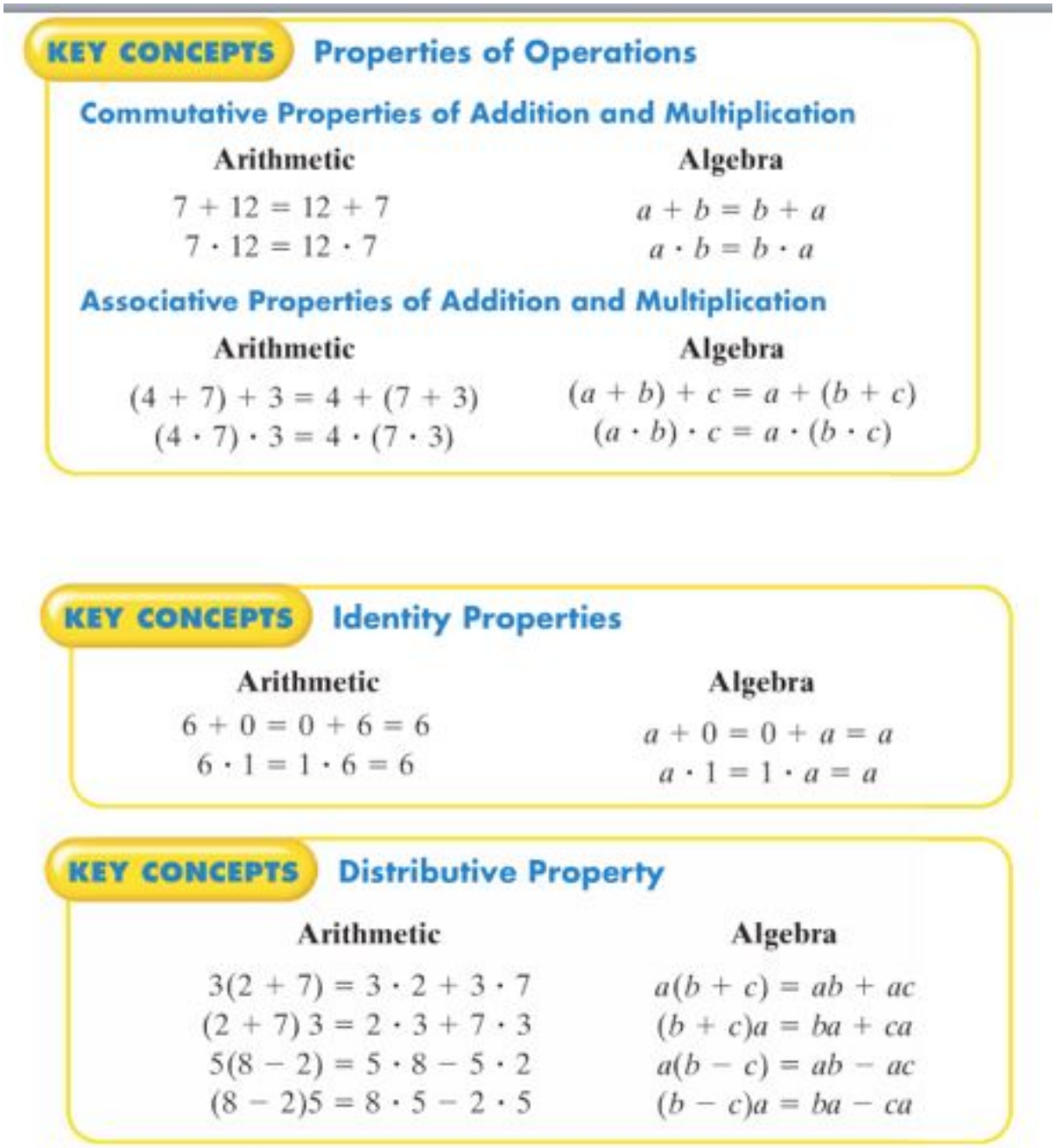
Simplify each expression. Refer to the integer rules below.

To add integers with the same sign, add absolute values and use the same sign. $3 + 5 = 8$ $-2 + -4 = -6$ To add integers with different signs, subtract absolute values and use the sign of the integer with the greater absolute value. -7 + 3 = ? |-7| - |3| = 7 - 3 = 4 Use the sign of -7. So, -7 + 3 = -4	To subtract an integer, add its opposite $3 - (-2) = 3 + 2$ The opposite of -2 is 2 $= 5$ $3 - 4 = 3 + (-4)$ The opposite of 4 is -4 $= -1$ $-4 - (-5) = -4 + 5$ The opposite of -5 is 5
If two integers have the same sign, the product is positive. $8 \cdot 7 = 56$ $8 \cdot (-7) = -56$ If two integers have opposite signs, the product is negative. $(-8) \cdot 7 = -56$ $8 \cdot (-7) = -56$	If two integers have the same sign the quotient is positive. $8 \div 2 = 4$ $(-8) \div (-2) = 4$ If two integers have opposite signs, the quotient is negative. $(-8) \div 2 = -4$ $8 \div (-2) = -4$

7. $-6 + 4$ **8.** $-4 + (-5)$ **9.** $-2 - 6$ **10.** $-8 - (-5)$

11. $15 - (-8)$ **12.** $-15 \cdot (-5)$ **13.** $2 \cdot (-7) \cdot 5$ **14.** $\frac{-12}{6}$ **15.** $\frac{-80}{-16}$

Identify each property. Refer to the properties below.



KEY CONCEPTS Properties of Operations

Commutative Properties of Addition and Multiplication

Arithmetic	Algebra
$7 + 12 = 12 + 7$	$a + b = b + a$
$7 \cdot 12 = 12 \cdot 7$	$a \cdot b = b \cdot a$

Associative Properties of Addition and Multiplication

Arithmetic	Algebra
$(4 + 7) + 3 = 4 + (7 + 3)$	$(a + b) + c = a + (b + c)$
$(4 \cdot 7) \cdot 3 = 4 \cdot (7 \cdot 3)$	$(a \cdot b) \cdot c = a \cdot (b \cdot c)$

KEY CONCEPTS Identity Properties

Arithmetic	Algebra
$6 + 0 = 0 + 6 = 6$	$a + 0 = 0 + a = a$
$6 \cdot 1 = 1 \cdot 6 = 6$	$a \cdot 1 = 1 \cdot a = a$

KEY CONCEPTS Distributive Property

Arithmetic	Algebra
$3(2 + 7) = 3 \cdot 2 + 3 \cdot 7$	$a(b + c) = ab + ac$
$(2 + 7)3 = 2 \cdot 3 + 7 \cdot 3$	$(b + c)a = ba + ca$
$5(8 - 2) = 5 \cdot 8 - 5 \cdot 2$	$a(b - c) = ab - ac$
$(8 - 2)5 = 8 \cdot 5 - 2 \cdot 5$	$(b - c)a = ba - ca$

16. $2(11) + 2(4) = 2(11 + 4)$

17. $(3 + 4) + 5 = 3 + (4 + 5)$

18. $2n + p = p + 2n$

19. $(3 + m)(-7) = -21 - 7m$

Section 2

Solve each equation.

1. a - 10 = 12

2. -3x = 27

3. 6n + 3 = 21

4. $10 = \frac{m}{5} + 2$

5. -b + 2 = - ½

6. 7g - 4 = 10

Simplify each expression.

7. 6x + 4 - 3x

8. 7(h - 5)

9. 13q + 91 - 13q

10. -(8z + 2z - 1)

Solve each equation.

11. 16 = -(2 - 2b)

12. 0 = 1.5(7 - k) - k

13. 123 = 9y + 4 - 7y

14. 4(2.2d - 1) - 0.8d = 23

Section 3

Write the fraction in simplest form.

1. $\frac{20}{25}$

2. $\frac{7}{77}$

3. $\frac{-9}{42}$

4. $\frac{36}{63}$

Write each decimal as a mixed number or fraction in simplest form.

5. 0.45

6. 12.2

7. $0.\overline{8}$

Compare. Write <, =, or >.

8. $\frac{25}{36}$ _____ $0.69\overline{4}$

9. 2.7 _____ $\frac{10}{3}$

10. -4.3_____ -4.2

11. $\frac{-17}{5}$ _____-15.9

Simplify. Write each answer in simplest form.

12. $-\frac{3}{8}+\frac{7}{8}$

13. $3\frac{1}{2}-(-\frac{11}{14})$

14. $\frac{-3}{7}\cdot\frac{5}{9}$

15. $-4\frac{5}{24}\cdot(-6)$

16. $-2\frac{1}{2}\div 6$

17. $-25\div\frac{5}{7}$

Simplify or evaluate each expression.

18. $-3^2-(-8)$

19. $(-2)^3+4\div 2-3$

20. $(3-4)^5-17+1^{12}$

21. $2r^2+6r+3$ for $r=-6$

22. $-c^3+2c^2-c+8$ for $c=3$