Understanding Pre-Algebra Rules

1. Write the TWO rules for adding positive and negative numbers and give an example for each.

① IF THE SIGNS ARE THE SAME, ADD AND KEEP THE SIGN.

$-3 + -4 = -7$

② IF THE SIGNS ARE DIFFERENT, SUBTRACT AND KEEP THE SIGN FARTHEST FROM Zero.

$(-3) + 7 = +4$

2. Write the rule for subtracting positive and negative numbers and give two different examples, one that uses subtracting a positive and subtracting a negative.

CHANGE THE SUBTRACTION SIGN TO ADDITION BY CHANGING THE SECOND SIGN.

$-3 - 7 = -3 + {}^{-}7 = -10$

$-3 - (-7) = -3 + (+7) = +4$

3. Write the TWO rules for multiplying and dividing positive and negative numbers. Give examples.

① IF THE SIGNS ARE THE SAME, THE ANSWER IS positive.

$(-3) \times (-4) = +12$, $\frac{-56}{-8} = +7$

② IF THE SIGNS ARE DIFFERENT, THE ANSWER IS (-).

$(-3) \times 5 = (-15)$ $\frac{64}{-8} = -8$

4. For which operations does the **associative** rule apply? If you check yes, show an example.

Operation	Yes	No	Example
Addition	✓		$A + (B+C) = (A+B) + C$
Subtraction		✓	
Multiplication	✓		$3(2*4) = (3*2)*4$
Division		✓	

5. For which operations does the **commutative** rule apply? If you check yes, show an example.

Operation	Yes	No	Example
Addition	✓		$3+2 = 2+3$
Subtraction		✓	
Multiplication	✓		$4 \cdot 3 = 3 \cdot 4$
Division		✓	

6. Write the formula for converting from Fahrenheit to Celsius.

$$(\_\_\ ^\circ F - 32)\frac{5}{9} = \_\_\_\ ^\circ C$$

7. Write the formula for converting from Celsius to Fahrenheit.

$$\left(\_\_\ ^\circ C \times \frac{9}{5}\right) + 32 = \_\_\_\ ^\circ F$$