Name _____

Explain the Grouping Answer Key

1. Compute both sides (Addition)

a) (4 + 5) + 3 = 9 + 3 = **12** 4 + (5 + 3) = 4 + 8 = **12**

b) (7 + 2) + 8 = 9 + 8 = **17** 7 + (2 + 8) = 7 + 10 = **17**

c) (6 + 9) + 5 = 15 + 5 = **20** 6 + (9 + 5) = 6 + 14 = **20**

What do you notice?
Both sides always give the same sum because regrouping does not change the total.

2. Compute both sides (Multiplication)

a) (3 × 2) × 5 = 6 × 5 = **30** 3 × (2 × 5) = 3 × 10 = **30**

b) (4 × 5) × 6 = 20 × 6 = **120** 4 × (5 × 6) = 4 × 30 = **120**

c) (2 × 3) × 9 = 6 × 9 = **54** 2 × (3 × 9) = 2 × 27 = **54**

Pattern: Changing the grouping in multiplication doesn't change the product.

3. Fill in the missing number

a) (5 + 6) + **3** = 5 + (6 + 3)
b) (3 × 4) × **8** = 3 × (4 × 8)
c) (9 + 2) + 4 = 9 + (**2** + 4)

4. Add parentheses

a) 2 + 7 + 3 = **(2 + 7) + 3** or **2 + (7 + 3)**
b) 5 × 2 × 6 = **(5 × 2) × 6** or **5 × (2 × 6)**
c) 10 + 8 + 2 = **(10 + 8) + 2** or **10 + (8 + 2)**
d) 3 × 9 × 4 = **(3 × 9) × 4** or **3 × (9 × 4)**