

WARM-UP

Problem 1 Illustrate the equality $3 + 7 = 7 + 3$

- a) using a set model, and
- b) a bar diagram.

Problem 2 a) Illustrate the operation $13 - 8$ by crossing out objects in a set model.

- b) Illustrate the operation $16 - 7$ on the number line.

Problem 3 In Activity 3J on page 48 of Beckmann, for each problem rewrite the student's work, using the same ideas but using the $=$ sign correctly. Be prepared to come up to the board and show your work.

PROBLEMS

Problem 3 Do parts 2 through 7 of Activity 3F on page 44 of Beckmann.

Problem 4 Do parts 2 and 3 of Activity 3B on page 40 of Beckmann.

Problem 5 List two different advantages of using number bonds (as shown on p.21 of Parker and Baldrige) to represent arithmetic facts "within 20". One must reference place value in our base 10 number system. List one disadvantage.

LOOKING FORWARD

Problem 6 A student performing the addition $8 + 7$ might use the following reasoning:

$$\begin{aligned} 8 + 7 &= 8 + (2 + 5) \\ &= (8 + 2) + 5 \\ &= 10 + 5 \\ &= 15. \end{aligned}$$

At each step, say which property of addition (additive identity, commutativity or associativity) is used, or which "thinking strategy" (page 17 of Parker and Baldrige) is used.

Problem 7 If the additive identity is 0, what is the multiplicative identity? Is multiplication commutative? Is multiplication associative?