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Determining Properties of Multiplication

1. Name the property of multiplication used in the expressions below.

   a. 27 × 0 = 0
   b. 1 × 1104 = 1104
   c. 25 × 114 = 114 × 25
   d. 14 × 130 = 14 × (100 + 30)
   e.(25 × 8) × 50 = (8 × 50) × 25

   Solution:

   a.
   b.
   c.
   d.
   e.

2. Find the missing number.

   a. 25 × 70 = ___ × 25
   b. 135 × 20 = (20 × ___) + (20 × 35)
   c. 9 × 257 = 9 × (200 + ___)
   d. (11 × 40) × 4 = (___ × 40) × 11

   Solution:
   a.
   b.
   c.
   d.

3. Write a number sentence that illustrates the distributive property of multiplication. Find the product.

   a. 15 × 105
   b. 28 × 230
   c . 11 × 210
   d. 8 × 57
   e. 14 × 89

   Solution:

   a.
   b.
   c.
   d.
   e.

4. Michelle searched through all 6 of her drawers and found ten $5 bills. What is the total value of money does she have in $5 bills?

   Solution:

5. Grace bakes some cookies. If she baked 25 pans of cookies for 30 minutes each and there are 8 cookies per pan, how many cookies did Grace bake?

   Solution:

6. Use the distributive property. The roof is 8 feet above the floor. To support it, John needs 2 sets of metal bars. If each set has 17 metal bars, how many metal bars are there in all?

   Solution:

7. Lebron bought 6 basketballs at a price of $17 each. Which statement uses the distributive property of multiplication correctly to solve the equation?

   a. 6 × 10 + 6 × 7
   b. 10 + 7 × 6
   c. 10 × 7 + 6
   d. 6 × 17

   Solution:

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Answer Key

1.
   a. Zero Property of Multiplication
   b. Identity Property of Multiplication
   c. Commutative Property of Multiplication
   d. Distributive Property of Multiplication
   e. Associative Property of Multiplication

2.
   a. 70
   b. 100
   c. 57
   d. 4

3.
   a. $15 \times 105 = 15 \times (100 + 5) = 15 \times 100 + 15 \times 5 = 1500 + 75 = 1575$
   b. $28 \times 230 = 28 \times (200 + 30) = 28 \times 200 + 28 \times 30 = 5600 + 840 = 6440$
   c. $11 \times 210 = 11\times (200 + 10) = 11 \times 200 + 11 \times 10 = 2200 + 110 = 2310$
   d. $8 \times 57 = 8 \times (50 + 7) = 8 \times 50 + 8 \times 7 = 400 + 56 = 456$
   e. $14 \times 89= 14 \times (50 + 39) = 14 \times 50 + 14 \times 39 = 700 + 546 = 1246$

4. $50

5. 25 x 8 = (15 + 10) x 8 = 120 + 80 = 200 cookies

6. 34

7. A