

Warmup

1. Match the Equation with the Property

___ $19 + 0 = 19$

___ $13 \cdot 1 = 13$

___ $7 \cdot (15 \cdot 8) = (7 \cdot 15) \cdot 8$

___ $7 + (15 + 8) = (7 + 15) + 8$

___ $10 \cdot 5 = 5 \cdot 10$

___ $20 + 4 = 4 + 20$

___ $18 \cdot 0 = 0$

- a) Commutative property of addition
- b) Commutative property of multiplication
- c) Associative property of addition
- d) Associative property of multiplication
- e) Identity property of addition
- f) Identity property of multiplication
- g) Multiplication property of zero

2. Simplify:

$3x + 2y + 1y + 4x$

3. Simplify: $y + x^2$,
when $x = -8$, and $y = 4$

4. Fill in the blank:

$4(5 + 6) = \underline{\hspace{1cm}}(5) + 4(6)$

5. Write

$5 \cdot 11 \cdot 5 \cdot 11 \cdot 5 \cdot 11 \cdot 5$
as a product of
powers.

I. Monomials, Binomials, Trinomials

Polynomial is an expression with 1 or more terms. In simplified form there are no square roots, the exponents are whole numbers

Monomial is a polynomial with 1 term

$-4x \quad 16x^2 \quad 20x^2y^2$

binomial is a polynomial with 2 terms

$-4x + 2y \quad 16x^2 - 5y \quad 20x^2y^2 + 9x$

trinomial is a polynomial with 3 terms

$8 - 4x + 2y \quad 9 + 16x^2 - 5y \quad 20x^2y^2 + 9x - 7$

Give the following monomials determine if they are like terms. Then determine if they are equivalent.

$-9xy$

$-90xy$

equivalent like-terms
like-terms
neither

Like-terms like terms have the same variable factors.

-9xyz 18xyz

If the coefficients are equal, the terms are considered equivalent.

-9st -9ts

If the coefficients are opposite numbers, then they are zero pairs.

-8ab 8ab

8. Match the like terms

9sc

7ps

7p

8cs

3ps

-4p

-10mp

-4m

4m

-5mp

10. Match the zero pairs

2a

4cf

-6b

6b

3ab

-2a

8bc

-3ab

-4cf

-8bc

II. Addition of Monomials and Binomials

Addition of monomials and binomials add the like-terms.

$$(7x + -10) + -7x$$

$$(5s - 9) + (-7s + 8)$$

11. $(5a + 7) + 9a$

12. $(10m + -2) + (8m + -5)$

13.

II. Addition of Trinomials

Addition of trinomials add the like-terms.

$$(3x^2 - 10x + 6) + (7x^2 + 9x - 8)$$

$$(5s - 9 - 5t) + (6t - 7s + 8)$$

$(-5a + 3b + 7) + (9b + 9a + 9)$

14. $(6p + -3r + 5s) + (-4p + 8r + -8s)$

15. $5h + 7k + -3m + 6h + -2k + 8m$

16.

IV. Practice

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