SC Algebra 1
10.5 Using Distributive Property

How can I meet today's standards?

*I can **factor polynomials** using the distributive property or by grouping terms.*

Warm Up:

Name the greatest common factor.

1) $6x$, $12y$
2) $16a^3$, $4a$
3) $15g^2h$, $10gh^2$
4) $3rst^3$, $12r^2t$, $9rs^2t$
5) $18x^4y^3$, $6x^3y^2$, $9x^2y$

Speak Like A Mathematician:

factoring – the process of expressing a _____ as the _____ of monomials and polynomials.

factoring by grouping – using the _____ property to factor some polynomials with _____ or more terms.

Example 1: Use the Distributive Property:

Use the distributive property to factor each polynomial.

a) $12a^2 + 16a$

b) $20x^2y^2 - 45x^2y - 35x^2$

c) $49x^3 - 21x^2$

d) $15g^2h - 6gh^2 + 12gh$

Check:

a) $33n^3 - 121n^2$

b) $14a^2b^2c - 6ac^2 + 10ac$

Example 2: Use Factoring

The 1980 eruption of Washington's Mount Saint Helens had an initial blast with a velocity of 440 feet per second. The expression $440t - 16t^2$ models the height of a rock that erupted from the volcano after t seconds. Factor the expression.

A rectangle has an area of $18x^2 + 36x$. Factor the polynomial to find an expression that represents the area of the rectangle as a product of its length and width.

Example 3: Factor by Grouping

Factor.

a) $2uv + 6u + 5v + 15$

b) $x^3 + 7x^2 + 2x + 14$

c) $21m - 3mp + 4p - 28$

d) $-2y^3 + 6y^2 + 5y - 15$

Check:

Factor.

$tw + 10t - 2w - 20$

$-3x^3 + 33x^2 + 4x - 44$