KEY

Algebra 1: 7.4 FACTORING POLYNOMIALS

Warm Up:

Find Factors of 18

1	x	18
2	x	9
3	x	6

1, 2, 3, 6, 9, 18 are factors of 18

Find Greatest Common Factor (GCF).

a. 15, 12

3×5 3×4

G.C.F is 3

b. 7, 9

PRIME

Factors: Numbers that are multiplied together are called factors. $3 \times 5 = 15$ (Factors)

GCF: The Largest factor that two or more numbers have in common.

$6 \times 3 = 18$ $6 \times 5 = 30$

6 is GCF of 18 & 30

Find GCF of monomials

1. $3x, 3x^2$

$3 \cdot x$ $3 \cdot x \cdot x$

G.C.F is $3x$

2. $10x$ and 25

$5 \cdot 2 \cdot x$ $5 \cdot 5$

G.C.F is 5

3. $12a^5b$ and $16a^4b^2$

$4 \cdot 3 \cdot a^4 \cdot a \cdot b$ $4 \cdot 4 \cdot a^4 \cdot b \cdot b$

G.C.F is $4a^4b$

4. 25 and $18m^2$

PRIME

*Think of factoring as opposite of distribution.

Distribution

$x(x+2) \longrightarrow x^2+2x$

Factoring

$x^2+2x \longrightarrow x(x+2)$

Factor out GCF from each polynomial and check

1. $2x^2 + 6x$

$2x(x+3)$

Check: $2x^2+6x$

2. $3x^2 + 9x$

$3x(x+3)$

Check: $3x^2+9x$

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3. $12x^5 + 8x^4 - 6x^3$

$2x^3(6x^2 + 4x - 3)$

check

$12x^5 + 8x^4 - 6x^3$

4. $10a^2b + 12ab^2$

$2ab(5a + 6b)$

check

$10a^2b + 12ab^2$

5. $100a^7b^5 - 150a^8b^3$

$50a^7b^3(2b^2 - 3a)$

Check: $100a^7b^5 - 150a^8b^3$

Try it....Factor out GCF and check your answer

1. $x^{10} + x^9 - x^8$

$x^8(x^2 + x - 1)$

check:

$x^{10} + x^9 - x^8$

2. $24x^3y^2 - 30x^2y^3 + 12x^2y^4$

$6x^2y^2(4x - 5y + 2y^2)$

check:

$24x^3y^2 - 30x^2y^3 + 12x^2y^4$

HW. 7.4 Pg 285 #26-37