

Name: KEY

Read all directions and problems carefully! Show all appropriate work for credit.

1. Find the Greatest Common Factor of each of the following.

24 and 36

START W/ THE SMALLER #.

$1 \cdot 24$
 $2 \cdot 12$
 $3 \cdot 8$
 $4 \cdot 6$

GCF: 12 (+1)

a^5b^3 and a^2b^8

GCF: a^2b^3 (+2)

60 and 105

$1 \cdot 60$
 $2 \cdot 30$
 $3 \cdot 20$
 $4 \cdot 15$
 $5 \cdot 12$
 $6 \cdot 10$

GCF: 15 (+1)

NOTE: (z) IS NOT A COMMON FACTOR.

GCF: x^7y^2 (+2)

2. Factor the following by removing the greatest common factor.

$6a^4b^6 - 18a^2b^7 + 30a^6b^3$

$30x^3y^4z^5 - 45x^5y^4z^3$

GCF: $6a^2b^3(a^2b^3 - 3b^4 + 5a^4)$ (+2)

GCF: $15x^3y^4z^3(2z^2 - 3x^2)$ (+2)

3. Factor the following polynomial by grouping.

$x^2 - 3x + 4ax - 12a$

$4a^2 + 5ab - 8a - 10b$

$x(x-3) + 4a(x-3)$

$a(4a+5b) - 2(4a+5b)$

$(x-3)(x+4a)$
 OR
 $(x+4a)(x-3)$

(+2)

$(4a+5b)(a-2)$ (+3)

15