FACTORING

* Other than common factoring, can only factor expressions with even exponents

Common Factor

i.e. $8m^3 - 4m^2$
$= 4m(2m-1)$

Divide all terms by the GCF

Number of terms

2

- Is there a minus sign between?
- Can both terms be square rooted?

3

4

Can the expression be split in half to create a common factor in both halves

Difference of Squares

Take square root of each term and put different signs in each bracket

i.e. $9k^2 - 100$
$= (3k-10)(3k+10)$

Factor by Grouping

common factor each half then common factor again

i.e. $2ax - 3bx - 2ay + 3by$
$= x(2a-3b) - y(2a-3b)$
$= (2a-3b)(x-y)$

Is the middle $2\sqrt{\text{term 1}}\sqrt{\text{term 3}}$

Value in front of squared term is 1

Value in front of squared term is not 1

Simple Trinomial

Two terms that add to the middle and multiply to the last value

i.e. $c^2 + 21c - 100$
$(c+25)(c-4)$

Perfect Square

square root of both terms and sign of middle

i.e. $4m^2 - 20m + 25$
$= (2m-5)^2$

Complex Trinomial

- multiply 1st and last
- Values that add to middle and multiply to last
- split in ½ and common factor

i.e. $4x^2 - 7x + 3$
$= 4x^2 - 4x - 3x + 3$
$= 4x(x-1) - 3(x-1)$
$= (x-1)(4x-3)$

Ex/ Factor.

Simple a) $x^2+11x+24$

$=(x+3)(x+8)$

Difference of Squares b) x^2-25

$=(x-5)(x+5)$

Common c) $6a^2-9ab$

$=3a(2a-3b)$

Complex d) $6x^2-11x-10$

$=6x^2-15x+4x-10$

$=3x(2x-5)+2(2x-5)$

$=(2x-5)(3x+2)$

Perfect e) $4a^2+20a+25$

$=(2a+5)^2$

Common f) $3x^2-3x-216$

$=3(x^2-1x-72)$

Simple

$=3(x-9)(x+8)$

Put in correct order first → g) $a^2+18-11a$

$=a^2-11a+18$

Simple

$=(a-9)(a-2)$

h) $5a^2-20$

Common

$=5(a^2-4)$

Difference

$=5(a-2)(a+2)$

Simple i) $x^2-4xy-12y^2$

$=(x-6y)(x+2y)$

Homework: Pg. 236 #'s: 6-9,11