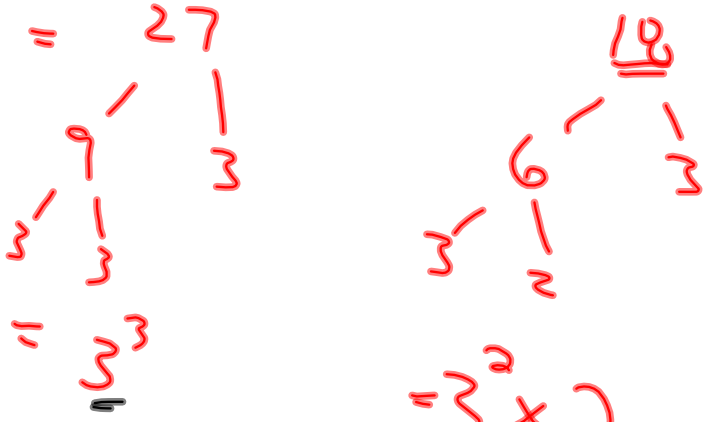
LCM:

27

18



$= 3^3$

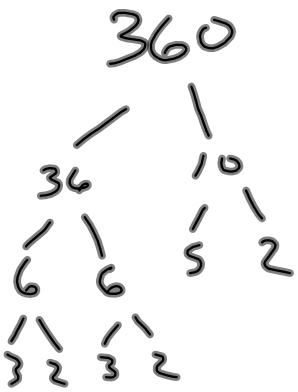
$= 3^2 \times 2$

GCF: 9

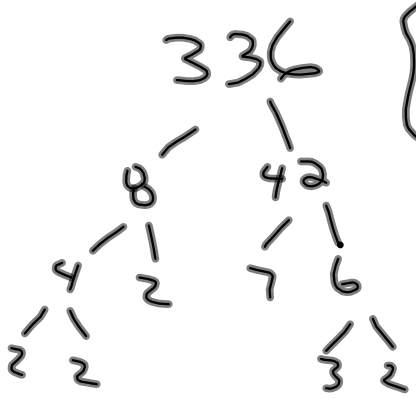
LCM: $3^3 \times 2$

$= 54$

Find LCM and GCF



$= 2^3 \cdot 3^2 \cdot 5$



$= 2^4 \cdot 7 \cdot 3$

GCF ⇒ "Look for factors common to all, then choose lowest power of each and multiply"

$GCF = 2^3 \times 3$

$= 24$

LCM ⇒ "Must include every factor from all numbers, select highest exponent from factors that repeat.

LCM ⇒ $2^4 \times 3^2 \times 5 \times 7$

$= 16 \times 9 \times 35$

$= 5040$

Factoring

There are 5 different kinds of Factoring:

- **Greatest common factor (GCF)**
- **Factor by grouping ("Pair them up")**
- **Simple Trinomials (Factor by Inspection)**
- **Hard Trinomials (Factor by Decompostion)**
- **Special Factors**
  - **Difference of Squares**
  - **Perfect Square Trinomials**

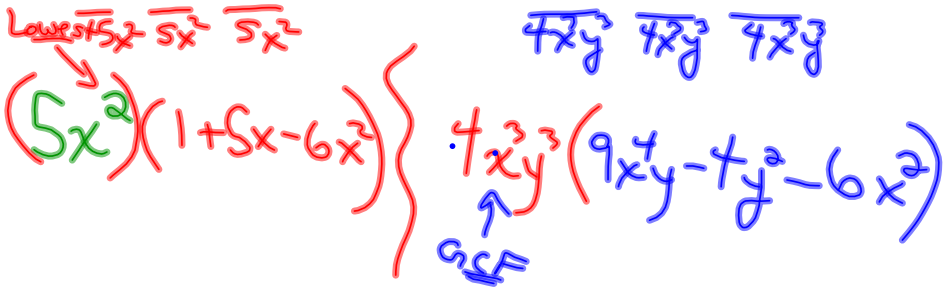
<u>Greatest Common Factor</u>- there is a Greatest Common Factor amongst any number of terms in a polynomial

- **factor out the GCF from the polynomial and multiply it against the remainder.**

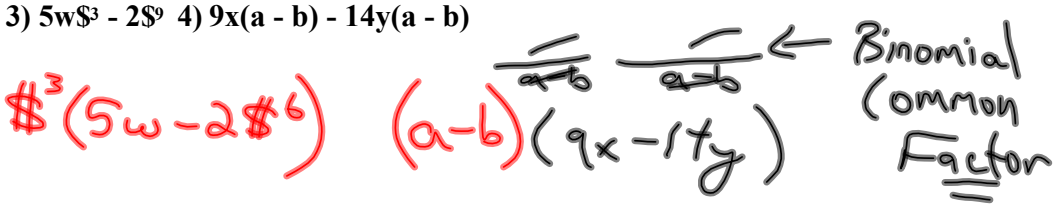
- **sometimes the GCF may be a polynomial.**
  ex: common binomial

EXAMPLES...

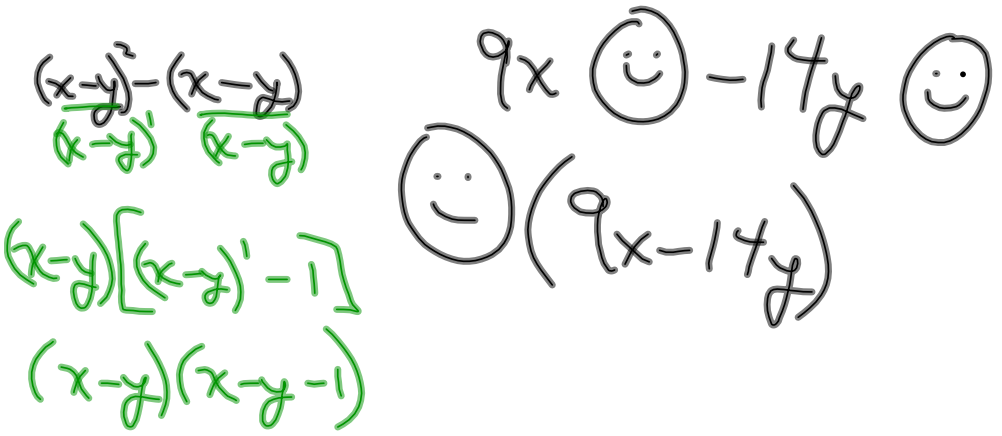
1) $5x^2 + 25x^3 - 30x^4$ 2) $36x^7y^4 - 16x^3y^5 - 24x^5y^3$



3) $5w\$^3 - 2\$^9$ 4) $9x(a - b) - 14y(a - b)$



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



Factor:

1) $3m^2+27$

$3(m^2+9)$

2) $-12x^3y^7+10x^2y$

$=2x^2y(-6xy^6+5)$

$=-2x^2y(6xy^6-5)$

3) $-10a^2b^4-35a^{10}$

$=-5a^2(2b^4+7a^8)$

4) $24a^7b^4c-8a^{10}b^2c^3+b^5c^7$

$=b^2c(24a^7b^2-8a^{10}c^2+b^3c^6)$

FACTOR:

① $3w^3(x+7)^4 - 12w^8(x+7)^1$

$= 3w^3(x+7)^1\left[(x+7)^3 - 4w^5\right]$

$= 3w^3(x+7)\left((x+7)^3 - 4w^5\right)$

② $\left(4w^7 - 2b\right)^7 - 4w^7 + 2b$

$\left(4w^7 - 2b\right)^7 - \left(4w^7 - 2b\right)^1$

$\left(4w^7 - 2b\right)^1\left[\left(4w^7 - 2b\right)^6 - 1\right]$

Pg. 155
#8, 10, 14
15(b), 16