+ $10x$

$(3x+5)$

2. $5c^3 - 25c^2 + 10c$

$5c(1c^2-5c+2)$

3. $15y^3 + 6y$

$3y(5y^2+$

$+ 16x^3 + 4x^2$

$5x^2+8x+2)$

5. $4d^4 + d^3 - 3d^2$

$d^2(4d^2+d-3)$

6. $8a^5 - 10a^$

$2a^2(4a^3-5$

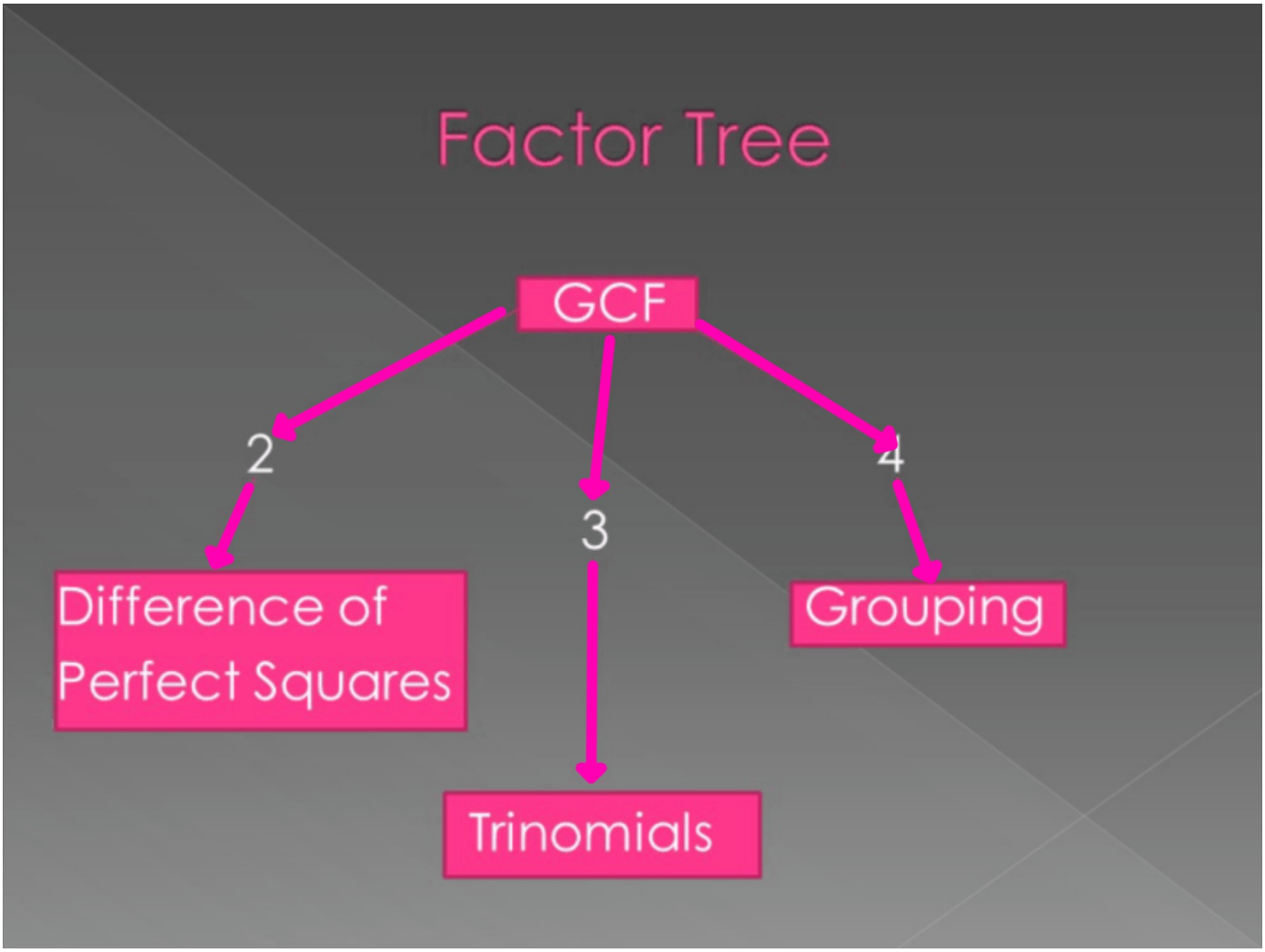
Multi- Step Factoring

Unit 6 Supplement

Multi-step Factoring

- Some polynomials are able to be factored multiple times

- Steps
  - 1.) Find the GCF and factor
  - 2.) Factor using trinomials (3- terms) or factor using difference of perfect squares (2 terms)


Factor Tree
GCF
2
3
4
Difference of Perfect Squares
Trinomials
Grouping

Examples

1.) $2x^2 - 12x + 18$

$2(x^2 - 6x + 9)$

$2(x-3)(x-3)$

$\boxed{2(x-3)^2}$

2.) $6x^2 - 54$

$6(x^2 - 9)$

$6(x-3)(x+3)$

Examples (cont.)

3.) $3x^2 - 30x - 75$

$3(x^2-10x-25)$

~~$3(x-5)(x-5)$~~

4.) $24x^3 + 18x^2$

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

Examples (cont.)

5.) $4x^2 - 81y^2$

$(2x - 9y)(2x + 9y)$

6.) $20x^2 - 45$

$5(4x^2 - 9)$

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

Classwork

- Wkst 10.8B # 7-24
- Pg 617 # 10-18

$8x^2$

.3)

14. $3c^3 - 12c$

$3c(c^2-4)$

$3c(c-2)(c+2)$

15. -

$-2m$

$28a^2$

-4)

17. $32x - 48x^2$

$16x(2-3x)$

18. 3

$5x(7$

$m + 36$

$5m+12)$

$)(m+2)$

20. $4x^2 + 4x - 80$

$4(x^2+x-20)$

$4(x+5)(x-4)$

21. $2t$

$2t(t$

$2t(t+$

$^2 + 24x$

$x+4)$

$x+2)$

$2)^2$

23. $x^3 + x^2 + 4x + 4$

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

$x^2(x+1)+4(x+1)$

$(x+1)(x^2+4)$

24. d^3

(d^3+2d^2)

$d^2(d+2)$

$(d^2+3)(d$

Homework

- Pg 632 # 1-6, 13-19