Unit 10 Review

Simplify each expression.

1) $\left(7p^3 + 5p - 7p^2\right) - \left(2p + 6p^3 + 6p^2\right)$

2) $\left(7 + 5x^2 + 3x\right) - \left(8x + 4x^3 + 6x^2\right)$

3) $(9g^3 + 5g + 16) + (9g^3 - 12g^2 + g)$

4) $4\left(-5x^2 + 4x^3\right) - 8\left(x^2 - 3x + 1\right)$

5) Review of Main Ideas

FACTORED FORM: $(2x + 3)(5x + 1)$

Product of binomial factors – "Two term polynomials multiplied by each other"

First term   *Middle term*   *Last term*

$2x$

$(2x+3)(5x+1)$ $(2x+3)(5x+1)$ $(2x+3)(5x+1)$

$10x^2$ $+\ 15x$ 3

$17x$
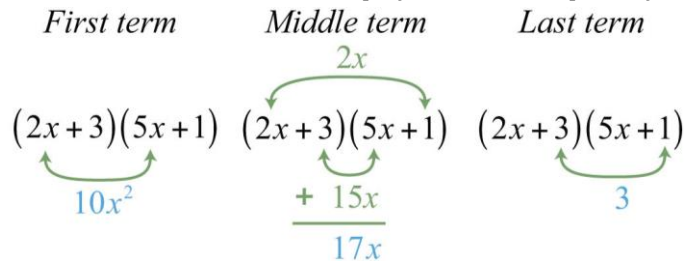
STANDARD FORM: $10x^2 + 17x + 3$
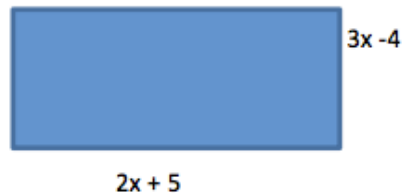
Trinomial – "Polynomials with three terms"

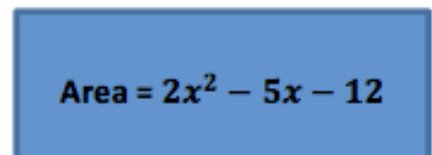**Factoring Trinomials:**

*** Remember that Area = base x height ***

Double distributing	**Factoring**
Find the area in terms of x.	Find the base and height in terms of x.

3x -4

2x + 5

Area = $2x^2 - 5x - 12$

Find each product.

6. $(3x-5)(4x+9)$	7. $(-2x-1)(-7x+3)$	8. $(2n+6)(-n^2+6n+4)$
9. $(3v+2)(-6v^2+4v-2)$	10. $(3x-4)^2$	

Factor completely.

11. $50k^2-60k$	12. $7n^3+28n^5-49n^6$
13. $-27x^4+18x^3-30x$	14. $-30-30x-70x^2$
15. $x^2+6x-27$	16. $3x^2+7x+2$

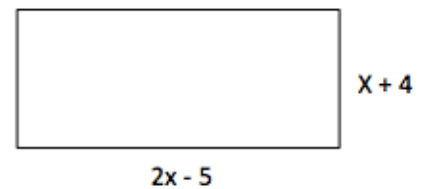|	
17. $9a^2 - 16$	18. $-20x + 2x^2 + 18$
19. $36x^2 + 6x - 12$	20. $10x^2 + 55x - 30$
21. $-n^2 + 10n - 24$	22. $6m^4 - 9m^3 - 6m^2$
23. $16x^2 - 80x + 100$	24. $x^3 + 2x^2 - x - 2$

Solve each equation by factoring.

25. $r^2 - r - 2 = 0$	26. $x^2 = -4 - 4x$	27. $-r^2 - 6 = -7r$

28. $-3x^2 + x - 6 = -4x^2$	29. $-19r = 5r^2 - 4$	30. $2m^3 + m^2 - 98m = -3m^2 - 2m$
31. $0 = 6x^3 + 10x^2 + 3x + 5$	32. $(x+8)^2 = 16 - x^2 + 9x$	

33. A)

Find the perimeter of the rectangle at the right. (Remember perimeter comes from adding up ALL the sides)

X + 4

2x - 5

B)   Find the area of the rectangle at the right. Remember the area of a rectangle is A = L x W.

Find the roots of the equation.

34. $y = 8x^2 + 6x - 9$

35. $f(x) = 2x^3 - 20x^2 + 18x$

36. $s(x) = 36x^2 - 84x + 49$

37. $f(x) = 2x^3 - 3x^2 + 4x - 6$

38. What do the roots tell you about the function?