3.3 Common Factors of Polynomials (part 1)

*A polynomial is the addition or subtraction of terms (called monomials)

*Each term consists of a number (coefficient) and variables that have either positive or zero exponents. $x^0 = 1$

ex. $-5 \Rightarrow$ monomial (constant)

$2xy \Rightarrow$ monomial

ex// $3x^2yz + 2x - 1$

3 terms = trinomial

*Terms are held together by multiplication or division and separated by addition or subtraction

*The degree of a term is the sum of the exponents on the variables.

ex. $3x^1y^1 \Rightarrow 1+1 =$ degree 2 ex. $-5x^1y^3z^2 \Rightarrow$ degree 6

$\frac{1x^1}{1}$

*The degree of a polynomial is the degree of the term with the greatest degree.

ex. $2x^2 - 3x^1 + 5x^0 \Rightarrow$ degree 2

ex. $3x^2y^1 - 5x^2y^3 + 2x^4 \Rightarrow$ degree 5

* To add or subtract polynomials, group like terms together.

ex. $(x^2 - 2x + 5) - (-x^2 + x - 7)$

$= x^2 - 2x + 5 + x^2 - x + 7$

$= 2x^2 - 3x + 12$

ex. $(2x^2 - 5x - 3) - (-x^2 - 3x + 1)$

$= 2x^2 - 5x - 3 + x^2 + 3x - 1$

$= 3x^2 - 2x - 4$

Your turn: a) b)

*To multiply polynomials, multiply each term of the first polynomial by each term in the second polynomial.

ex. $(x+2)(2x^2-x+3)$

$=2x^3-x^2+3x+4x^2-2x+6$

$=2x^3+3x^2+x+6$

ex. $(x-3)(x^2+3x-2)$

$=x^3+3x^2-2x-3x^2-9x+6$

$=x^3-11x+6$

Your turn: a)

b)

Add the following polynomials (Write answers in descending order):

1. $(7j^3-2)+(5j^3-j-3)$
2. $(8a^5-4)+(3a^5+a-2)$
3. $(6m^5+1)+(2m^5+9m-1)$
4. $(3m^5+1)+(9m^5+3m-2)$
5. $(-5x^2-x+4)+(-3x^2-5x+2)$
6. $(-4x+4x^3+7)+(3x^3-9-3x)$
7. $(3x^2-2x+1)+(-x^2+3x+1)$

Subtract the following polynomials (Write answers in descending order):

8. $(-x^2+x-4)-(3x^2-8x-2)$
9. $(8x^2-3x)-(5x-5-8x^2)$
10. $(-x^2-5x-3)-(-7x^2-8x-8)$
11. $(-2x^3+x)-(7x-3-7x^3)$
12. $(3x^3+3x^2+9)-(5x^3-7x^2+6x-9)$
13. $(5x^3+5x^2+5)-(6x^3-6x^2+8x-5)$
14. $(5x^3+3x^2+5)-(7x^3-9x^2+8x-5)$

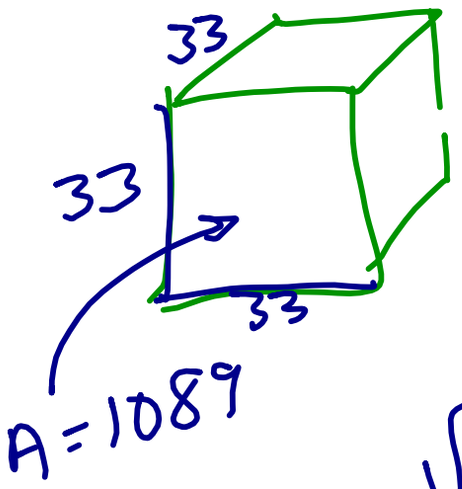
Multiply the following polynomials:

15. $(8x^3y^2)(-3x^2y^3)$
16. $(-9x^3y)(-8x^2y^3)$
17. $j^2(k^5j^3)$
18. $a^4(b^4a^6)$
19. $2x^3(9x^2+5y)$
20. $5x^3(2x+4y)$
21. $5m^2(3m^3+5m^2-4m+6)$
22. $-4x^2y(x^2+7xy-6y^3)$
23. $(x+6)(x+2)$
24. $(x-6)(x+9)$
25. $(4x-3)(3x-5)$
26. $(x-8)(x-7)$
27. $(6a+1)(5a+2)$
28. $(5x+4y)(2x+5y)$
29. $(2x+y)(4x-9y)$
30. $(6r-5)(6r+1)$
31. $(6c+7)(6c-7)$
32. $(3x+5y)^2$
33. $(x-2)(x^2-x+3)$
34. $(2x-5)(5x^2+4x+7)$

Homefun: Pg. #(1-34)even & 149 #(1-10)ace

2, 4, 6, ...

Quiz Review
Quiz Friday
} 3.1 + 3.2



SA = 6534

V = ?

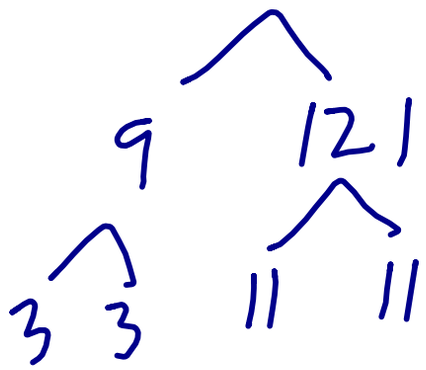
one side has

$SA = \frac{6534}{6} = 1089$

↑ one face

$\sqrt{1089} = 3 \cdot 11 = 33$

$1089 = 3^2 \cdot 11^2$



$\therefore V = 33^3$

$\boxed{V = 35937}$