Math 3 1.3 Factoring Review Unit 1

*EQ: How can we polynomial expressions using different methods?*

**Factoring #1:** Greatest Common Factor

*All expressions have the potential of being factored using GCF. Check for it every time!*

|  |  |  |
| --- | --- | --- |
| 1. 3*ab*2 – 6*a*2*b* | 1. 5*x*3 + 6*xy* | 1. *xyz* + 3*x*2*y*2*z*2 |

**Factoring #2:** Grouping (4-term polynomials)

*Factor by grouping the first two terms together, the second two terms together, and removing a GCF.*

|  |  |  |
| --- | --- | --- |
| 1. 30b4 – 45b3 – 10b2 + 15b | 1. 6x3 + 9x2 + 2x + 3 | 1. 8t3 + 36t2 + 2t + 9 |

**Factoring #3:** Factoring trinomials (ax2 + bx + c)

*X-Factor (what multiplies to “ac” that adds to “b”*), split into four terms, and continue by grouping.

|  |  |  |
| --- | --- | --- |
| 1. *x*2 + 6*x* + 8 | 1. 3*x*2 – 18*x* + 24 | 1. 2*x*3 – 2*x*2 – 12*x* |

**Factoring #4:** Difference of Squares a2 – b2 = (a – b)(a + b)

*There must be a subtraction sign and two perfect square binomials in order for this to work!*

|  |  |  |
| --- | --- | --- |
|  |  | 1. *x*4 - 81 |

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*SWBAT factor expressions using sum and difference of cubes.*

|  |  |
| --- | --- |
| **Sum of Cubes** | **Difference of Cubes** |
| a3 + b3 = (a + b)(a2 – ab + b2) | a3 - b3 = (a - b)(a2 + ab + b2) |

**Just remember to use SOAP**

*Same – Opposite – Always Positive*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **a** | **b** | **a2** | **ab** | **b2** |
|  |  |  |  |  |

1. x3 – 1
2. x3 + y3
3. 27x3 – y3
4. m3 – 216
5. 27 – y3
6. 125x3 + 8a3
7. 1000 + 27a3
8. s3  - 64
9. y3 + 125