**DEGREE of POLYNOMIALS**

|  |  |
| --- | --- |
| **DEGREE of a TERM**The \_\_\_\_\_\_ of the exponents of the variables.**Ex:** What is the degree of:a) x3 b) x3y4 | **DEGREE of a POLYNOMIAL**The \_\_\_\_\_\_\_\_\_\_ degree of its terms.**Ex:** What is the degree of x3y4 + x7y |

Try these: Determine the degree of the following:

|  |  |
| --- | --- |
| Ex1: 2x3 – 5x2 +1 | Ex2: -3x4y2z |
| Ex3: 3a5b4c3 – 10a4b3c2 + 3 | Ex4: x4y3  |

**ADDING POLYNOMIALS**

|  |
| --- |
| **To add polynomials**, this is VERY similar to collecting like terms, **you**:1. Drop the brackets – we are allowed to do this when there is only a PLUS sign between the brackets \* this does not work with a subtract sign.
2. Identify the like terms
3. Rearrange (optional) \*remember the sign (+/-) stays with the term
4. Add the coefficients \*remember the sign (+/-) stays with the term
5. Keep the variable the same
 |

|  |  |
| --- | --- |
| Example 1:= 2x2 + x2 + 3x + 2x + 5 + 3= 3x2 +5x +8 | Example 2:=3y2 + y – 2 |

**Practice: Adding Polynomials**

|  |  |
| --- | --- |
| a.  | b.  |
| c.  | d.  |
| e. Find the ‘algebraic expression’ for the perimeter of the following triangle. |
| **ANSWERS** a) 2a+2, b) -4a+5, c) 5n2+4n+3, d) 2p2–4p+3 d) P=3x -1 |

**SUBTRACTING POLYNOMIALS**

|  |  |  |  |
| --- | --- | --- | --- |
| **Finding the opposite:**What is the opposite of +5? \_\_\_\_\_ What is the opposite of -7? \_\_\_\_\_What is the opposite of x? \_\_\_\_\_ What is the opposite of -3y?\_\_\_\_\_Write the opposites of the following expressions (JUST SWITCH THE SIGN OF EVERY TERM)

|  |  |  |
| --- | --- | --- |
| a. -5x + 4 | b. 6x – y  | c. x + y |

 |

|  |
| --- |
| **TO SUBTRACT POLYNOMIALS, YOU CANNOT** DROP THE BRACKETS!If you drop the brackets, only the first term of the second bracket will be subtracted 🡪 *the entire bracket* following the minus sign needs to be subtracted. |

**RULE:**

|  |
| --- |
| 1. We need a + between the brackets in order to remove the brackets. We can change the – to a +, if we also change everything in the following bracket to ‘the opposite’. This is known as **ADDING THE OPPOSITE** (the additive inverse).

Then it is the same as adding polynomials!1. Drop the brackets – we are allowed to do this when there is only a PLUS sign between the brackets \* this does not work with a subtract sign.
2. Identify the like terms
3. Rearrange (optional) \*remember the sign (+/-) stays with the term
4. Add the coefficients \*remember the sign (+/-) stays with the term

 Keep the variable the same |

|  |  |
| --- | --- |
| **Example 1**= 2x2 - x2 + 3x - 2x + 5 - 3= x2 + x +2 | **Example 2**Every sign of 2nd poly switched= 5y2 – 5y – 8 |

**PRACTICE: SUBTRACTING POLYNOMIALS**

|  |  |
| --- | --- |
| a.  | b.  |
| c.  | d.  |
| e.  | f.  |
| g.  | h.  |
| i. Find an algebraic expression for the length of AB in the following diagram. |
| **ANSWERS**a) –a +4, b) -2a + 1, c) 2n – 1, d) -4p + 5, e) –m +5, f)4g2 +g +11, g) 3m2 – 3m – 9, h) -4m -16, i) x + 4 |