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| \*Learning Target: |
| \*Critical Content: |

\*To \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ polynomials, you simply combine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and are careful about \_\_\_\_\_\_\_\_\_\_\_\_\_

Ex: $\left(2x^{2}+5x-7\right)+(3-4x^{2}+6x)$ Ex: $\left(3-2x+2x^{2}\right)-(4x-5+3x^{2})$

Ex: $\left(3y+y^{3}-5\right)+(4y^{2}-4y+2y^{3}+8)$ Ex: $\left(7p+4p^{3}-8\right)-(3p^{2}+2-9p)$

Ex: The equations $P=7m+137 $ and $C=4m+78$ represent the number of cell phones (P) and digital cameras (C) sold in m months at an electronics store. Write an equation for the total monthly sales, T, of phones and cameras. Then, predict the number sold in 10 months.

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| **Find each sum or difference.**  |
| 1) $\left(y+5\right)+(2y+4y^{2}-2)$ | 2) $\left(3c^{3}-c+11\right)-(c^{2}+2c+8)$ | 3) $\left(2x-2y+1\right)-(3y+4x)$ |
| 4) $\left(x^{2}y-3x^{2}+y\right)+(3y-2x^{2}y)$ | 5) $\left(5n-2p^{2}+2mp\right)-(4p^{2}+4n)$ | 6) $\left(6ab^{2}+2ab\right)+\left(3a^{2}b-4ab+ab^{2}\right)$ |
| 7) $\left(5a^{2}-4\right)+\left(4c+7\right)-\left(c^{2}+5c-8\right)$ | 8) $\left(3n^{3}+3n-10\right)-\left(4n^{2}-5n\right)+(4n^{3}-3n^{2}-9n+4)$ |
| 9) From 1997 to 2007, the number of dogs *D* and the number of cats *C* (in hundreds) adopted from animal shelters in the United States are modeled by the following equations: $D=2n+3$ and $C=n+4$. Where *n* is the number of years since 1997. |
| a) Write an equation that models the total number *T* of dogs and cats adopted in hundreds for this time period. |
| b) If this trend continues, how many dogs and cats will be adopted in 2011? |
| 10) Kim is painting two walls of her bedroom. The area of one wall can be modeled by $3x^{2}+14$, and the area of the other wall can be modeled by $2x-3$. What is the total area of the two walls? |