<u>Like Terms</u> — in terms of algebra tiles, must be the same size and shape

eg.

$2x + 2$
$\oplus$
$-x - 1 - x^2$
$\Downarrow$
$x + 1 - x^2$
expression
$-x^2 + x + 1$

x x $-x$ $-x^2$

x x $-x$ $-x^2$

<u>Like Terms</u> have the same <u>variable(s)</u> with the same <u>exponent(s)</u>

eg. 1. $2e$, $4e$, $-3e$ $\longrightarrow$ LIKE

2. $8x^2$, $-5x^2$, $\frac{1}{2}x$ $\longrightarrow$ NOT LIKE

3. pq, $9qp$ $\longrightarrow$ LIKE

4. $2t$, $2t^2$ $\longrightarrow$ NOT LIKE

ONLY LIKE TERMS may be added or subtracted!

ex. 1. $2\underline{x} + 3\underline{x} = 5x$

2. $4a - a = 3a$

3. $5m - 2p + 3m - 6p$

$= 5m + 3m - 2p - 6p$

$= 8m - 8p$

4. $2t^2 + 4t - 8t - 7t^2$

$= 2t^2 - 7t^2 + 4t - 8t$

$= -5t^2 - 4t$

5. $8c - 3m - 5c + 7m$

$= 8c - 5c - 3m + 7m$

$= 3c + 4m$

6. $(2a + 5) + (3a - 2)$ wipe out
                                    the ( )
$= 2a + 5 + 3a - 2$ and +
                                    like
                                    terms
$= 5a + 3$

$$= 5a + 3$$

7. $(a - 2) + (4a - 6)$

$$= \underline{a} - 2 + \underline{4a} - 6$$

$$= 5a - 8$$

✳ When subtracting polynomials, we need to think about adding opposites

$$1 \longrightarrow -1$$
$$-a \longrightarrow a$$
$$a + 1 \longrightarrow -a - 1$$
$$2t - 1 \longrightarrow -2t + 1$$

8. $(3x - 4) - (2x + 3)$

$$= \underline{3x} - 4 - \underline{2x} - 3$$

$$= x - 7$$

9. $(5x^2 - x) - (2x^2 - 3x)$

change signs

$$= \underline{5x^2} - x - \underline{2x^2} + 3x$$

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

10. $\quad (6x^2 + 4) - (x^2 + 2)$

$$= \underline{6x^2 + 4} - x^2 - 2$$

$$= 5x^2 + 2$$

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