Combining Polynomials with X, Y & Z

Part 1: Think back to Adding Animals.
1. Can you combine 2 zebras (z) with 3 elephants (e)? If so, what do you get?

So, 2z + 3e = _____.

2. Can you combine 2 zebras (z) with 3 zebras (z) ? If so, what do you get?

So, 2z + 3z = _____.

Summary: To combine terms, they must have the same _____ and the same _____.

Part 2: Combining Polynomials with X, Y & Z
For each problem, 1) answer the same set of questions, 2) Draw each term as shown in the example, 3) record the terms in the table, 4) Combine like terms.

Ex. $(4x + 2y + 3z) + (2x^2 + 3y + 4z)$

What is the **operation**: Addition
Do I need to change to addition? Yes/No
Do I need to **distribute**? Yes/No
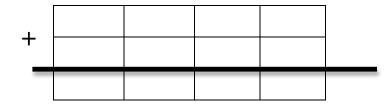If yes, write new **expression**:_____

DRAW the 1st **expression:**   x x x x   y y   z z z
DRAW the 2nd **expression:** $x^2 x^2$ y y y   z z z z
Simplified Expression: $2x^2$ + 4x   + 5y   + 7z

+		4x	2y	3z
	$2x^2$		3y	4z
	$2x^2$	4x	5y	7z

1. $(4y^2 + 3y + z) + (2y^2 + 3y + 4z + 2z^2)$

What is the **operation**:
Do I need to change to addition? Yes/ No
Do I need to **distribute**? Yes/No
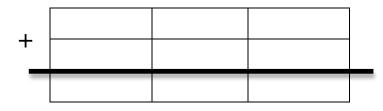If yes, write new **expression**:_____

DRAW the 1st **expression:**
DRAW the 2nd **expression:**
Simplified Expression:

+

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2. $(3a^2 + 2ab + b^2) + (4a^2 + 3ab + 2b^2)$

What is the **operation**:
Do I need to change to addition? Yes/ No
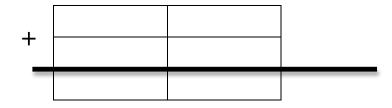Do I need to **distribute**? Yes/No
If yes, write new **expression**:_____

DRAW the 1st **expression:**
DRAW the 2nd **expression:**
Simplified Expression:

+

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3. $(4y^2 + 2z) - (2y^2 + z)$

What is the **operation**:
Do I need to change to addition? Yes/ No
Do I need to **distribute**? Yes/No
If yes, write new **expression**:_____

DRAW the 1st **expression**:
DRAW the 2nd **expression**:
Simplified Expression:

+

4. $(6y^2 + 3y + 5z^2) + 2(2y^2 + y + 2z^2)$

What is the **operation**:
Do I need to change to addition? Yes/ No
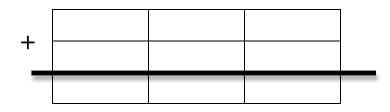Do I need to **distribute**? Yes/No
If yes, write new **expression**:_____

DRAW the 1st **expression**:
DRAW the 2nd **expression**:
Simplified Expression:

+

5. $-3(2a^2 + 3a + 2b + b^2) - (2a^2 + 2a + 4b + 2z^2)$

What is the **operation**:
Do I need to change to addition? Yes/ No
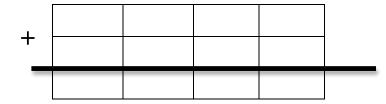Do I need to **distribute**? Yes/No
If yes, write new **expression**:_____

DRAW the 1ˢᵗ **expression:**
DRAW the 2ⁿᵈ **expression:**
Simplified Expression:

+

6. $5(3z^2 + 5y + x) - 2(2z^2 + 3y + 3x)$

What is the **operation**:
Do I need to change to addition? Yes/ No
Do I need to **distribute**? Yes/No
If yes, write new **expression**:_____

DRAW the 1ˢᵗ **expression:**
DRAW the 2ⁿᵈ **expression:**
Simplified Expression:

+