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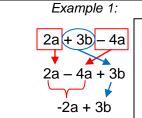
Notes Combining Like Terms

One way to simplify an expression is to "combine like terms."

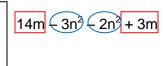
What does it mean to combine like terms?

You can only combine terms that have the same _____ and the same

To combine like terms, first use the commutative property to move all like terms together. Then, combine the coefficients of the variables. Example 1:



Note: Make sure to move any negative signs with the term it is before!



 $5x + 4x - 6 + 5x^2$

Example 1:

Note: all of your answers should be arranged so that the variables are in _____

order first, then in order from greatest to least

Watch out for the following common mistakes! Circle the mistakes below:

Mistake #1:

You can **ONLY** combine terms when the variable has the same exponent.

Mistake #2:

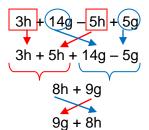
$$3y + 4x^{2} - 3y + 5y$$

$$3y - y + 5y + 4x^{2}$$

$$7y + 4x^{2}$$

You should ALWAYS put the variables of your answer in alphabetical order, then in order by exponent.

Mistake #3:



You should ALWAYS move the negative sign along with the term that is after it.

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Practice Combining Like Terms

Which terms are like terms? (Not all terms will be used.)

	***	non tonno are inte terriner	Trocan conno min bo do	<i>5</i> 41./
	Write all terms that	Write all terms that	Write all terms that	Write all terms that
	can be combined	can be combined with	can be combined	can be combined
Ĺ	with 3a.	4b.	with a^2 .	with 5.
	1. 14a	2. 5ab	3. 3b	4. 3a²
	5. 4b ²	6. 17	7. 100	8. 14ab
	9. 5a ³	10. 4a	11. 16b	12. 73a²

Simplify the following expressions by combining like terms. Show all work on a separate sheet of paper and box your answer.

13. 4x – 6x	14. 7y + 5y – 5y	15. 4r + 4y – 8
16. 3m + 4n – 6n	17. 4g + 6g – 3g	18. 15f – 5 + 2f
19. 13x – 7y + 4x	$20.5x^2 - 4x + 9x^2$	21. 4b + 7a – 8
22. 13r + 5s – 2r	23. a + a + 3b + b	$24.\ 3y - 4y^2 + 3y$
25. (3a – b) + 2a	26. $2w + 4w^2 - 5w^3$	$27. c^3 + 4c - 4c^3$
28. a – 3b + 5c + 4a	29. $2x + 7x - 6x + 8$	30. 11q + 5p – 9q + 7p
31. 3mn + 4m – 2mn	32. 0t – 9t + 6u + 4u ⁵	33. 11d + 5f – 21d + 5 – 8
34. 12 + 9x – 6x – 19	$35. y^2 + 3y^2 - 6y + 4y^2$	36. 2 – 5t + 8 + 5t – 8

Bonus: Simplify the expression below by combining like terms.

$$4z + x - 5x + 7y - 3x + 5y^2 - 3z + 16z + 14x - 5$$

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Practice

Combining Like Terms Puzzle

Simplify each expression by combining like terms. Find the answer at the bottom of the page. Then write the letter on the appropriate line below to spell out a secret message. (Some letters may be used more than once!)

Did you hear the one about the acupuncture?

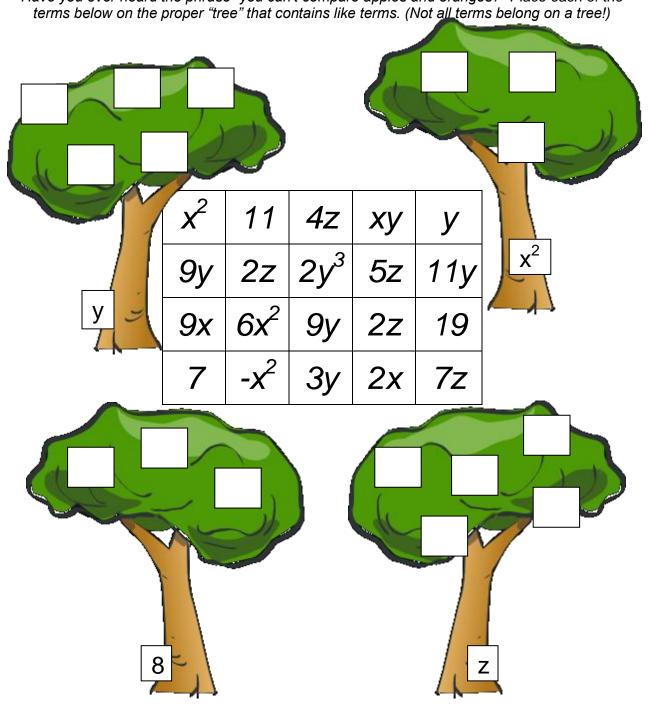
1	2		3	4	5		6	_	7	8	9
					_					_ !	
	10	11	12	13		14	15	16	17		

1. 2m + 3m ² - 4m	2. 2x + x – 4y	3. 2m + 4m – 3m ²	4. 2y + 14x – 7x + 9y
5. 8n – 4n² + 8n	6. 11g – 9g + 8g	7. 3m ² – 2m + 4m	8. 20 + 10q + 3q – 4
9. 4xy + x + 2xy	10. 6m ² + 6m – 9m ²	11. 3n – 6mn + 2n	12. $\frac{3}{2}x - y + \frac{1}{2}x + 3y$
13. y + x + y + x	14. 8n + 4n ² – 8n	15. 5 + 5mn – 11mn	16. 15y + 6y – 3x + xy
17. 3xy – 5xy + 21y			

I. 3m ² – 2m	N3x + xy + 21y	A. 7x + 11y	
S4n ² + 16n	W3m ² + 6m	E6mn + 5n	
E. –2xy + 21y	J. 3m ² + 2m	A. 13q + 16	
O6mn + 5	B. x + 6xy	L.2x + 2y	
T. 3x – 4y	A. 10g	D. 4n ²	

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	Enrichment Activity 1 Combining Like Terms

Have you ever heard the phrase "you can't compare apples and oranges?" Place each of the terms below on the proper "tree" that contains like terms. (Not all terms belong on a tree!)



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Enrichment Activity 2 Combining Like Terms Group Cards

Teacher Notes: Use these cards to put students into groups for class work or other activities. (It can also be used as an anticipatory set for a unit.) All students with like terms should find each other to form groups.

2a	4a	-3a	-7a
4b	9b	-4b	b
3ab	4ab	9ab	-2ab
4a ²	-2a ²	-a ²	-18a²
3b ²	-7b ²	-b ²	9b ²
10c	11c	-5c	-C
7c ²	-4c ²	$8c^2$	-12c ²
ac	3ac	6ac	-2ac
6bc	9bc	10bc	-3bc