

Subtraction of Algebraic Expressions

Unit: Algebraic Expressions - Student Practice Worksheet

Overview: Kabir subtracted $(3x - 2y)$ from $(5x + 4y)$ and forgot to flip a single sign. His answer was off by exactly $4y$ — the whole subtracted bracket had two terms, and he only flipped one. One missed sign, and the entire second half of the expression came out wrong.

Practice Questions (30 Total)

Section A - Easy

Q1. Eight x-tiles, three maroon taken away. What is $8x - 3x$?



- ☐ A. $11x$
- ☐ B. $24x$
- ☐ C. $3x$
- ☐ D. $5x$

Q2. (A) minus a bracket containing plain positive B equals:

- ☐ A. $A + B$
- ☐ B. $A - B$
- ☐ C. $-A - B$
- ☐ D. $B - A$

Q3. Subtract $(2a + 3b)$ from $(7a + 5b)$.

- ☐ A. $5a + 2b$
- ☐ B. $9a + 8b$
- ☐ C. $5a + 8b$
- ☐ D. $9a + 2b$

Q4. Ten y-tiles, four maroon taken. What is $10y - 4y$?



10y take 4y

- ☐ A. 6y
- ☐ B. 14y
- ☐ C. 40y
- ☐ D. 4y

Q5. What must be distributed across every term when subtracting a bracket?

- ☐ A. The multiplication sign
- ☐ B. The minus sign
- ☐ C. The division sign
- ☐ D. The equals sign

Q6. Subtract $(2p - q)$ from $(6p + 3q)$.

- ☐ A. $4p + 2q$
- ☐ B. $8p + 4q$
- ☐ C. $4p + 4q$
- ☐ D. $4p + 3q$

Q7. Teal 5m minus maroon 5m. What remains?



- ☐ A. 10m
- ☐ B. 25m
- ☐ C. 5m
- ☐ D. 0

Q8. (A) minus a bracket containing negative B equals:

- ☐ A. $A - B$
- ☐ B. $-A + B$
- ☐ C. $A + B$
- ☐ D. $-A - B$

Q9. What does 'substitute' mean in algebra?

- ☐ A. Replacing a letter with a specific number
- ☐ B. Removing a term entirely
- ☐ C. Adding a new letter to an expression
- ☐ D. Changing addition to subtraction

Q10. Subtract $(a+b)$ from $(a+b)$, then say why the result is 0.

- ☐ A. $2a + 2b$
- ☐ B. 0
- ☐ C. $a + b$
- ☐ D. $a - b$

Section B - Medium

Q11. Minus the inner $-2y$ flips to $+2y$. What is $(5x+4y) - (3x-2y)$?

$$\begin{array}{r} 5x + 4y \\ - (3x - 2y) \end{array}$$

- ☐ A. $2x + 6y$
- ☐ B. $2x + 2y$
- ☐ C. $8x + 2y$
- ☐ D. $8x + 6y$

Q12. Why does substituting numbers help catch algebra mistakes?

- ☐ A. It always makes the algebra easier to write
- ☐ B. It replaces the need to simplify at all
- ☐ C. If the original and simplified expressions give different numeric values, a real error has occurred
- ☐ D. Numbers are always more accurate than letters

Q13. Subtract $(4m - 3n)$ from $(9m + 2n)$.

- ☐ A. $5m - n$
- ☐ B. $5m + 5n$
- ☐ C. $13m - n$

☐ D. $5m + n$

Q14. Cards $x=10$ and $y=1$ in $2x+6y$. What number is that?

$x=10$	$y=1$	$2x + 6y$
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☐ A. 26

☐ B. 16

☐ C. 20

☐ D. 24

Q15. Subtract $(6y - 4)$ from $(6y - 4)$.

☐ A. 0

☐ B. $12y - 8$

☐ C. $6y$

☐ D. -4

Q16. Subtract $(2a - 5b)$ from $(6a - 2b)$.

☐ A. $4a - 3b$

☐ B. $8a - 7b$

☐ C. $4a + 3b$

☐ D. $4a - 7b$

Q17. Minus $(a-b-c)$ flips the inner signs. What is left?

$$(2a + b + c) - (a - b - c)$$

minus flips inner signs

☐ A. $a + 2b + c$

☐ B. $3a + 2b + 2c$

☐ C. $a + b + c$

☐ D. $a + 2b + 2c$

Q18. Subtract $(5x - 3)$ from $(8x + 2)$.

☐ A. $3x - 1$

- ☐ B. $3x + 5$
- ☐ C. $13x - 1$
- ☐ D. $3x - 5$

Q19. Subtract $(7p + 4q)$ from $(3p + 9q)$.

- ☐ A. $4p + 5q$
- ☐ B. $10p + 13q$
- ☐ C. $-4p - 5q$
- ☐ D. $-4p + 5q$

Q20. Subtract $(3x+2y-z)$ from $(5x+y+3z)$, grouping like letters.

- ☐ A. $2x + y + 4z$
- ☐ B. $2x - y + 4z$
- ☐ C. $8x + 3y + 2z$
- ☐ D. $2x - y + 2z$

Section C - Challenge

Q21. Whole perimeter $10x+4$, one pair $4x+2$. What does the other pair sum to?



- ☐ A. $6x + 4$
- ☐ B. $6x + 2$
- ☐ C. $14x + 6$
- ☐ D. $6x - 2$

Q22. Kabir subtracts (A) from (B) and gets a negative-looking result like $-3x + 2$. Does this mean he made a mistake?

- ☐ A. Yes, algebra answers can never have negative coefficients
- ☐ B. Yes, subtraction always gives a positive answer
- ☐ C. Not necessarily — a negative coefficient is a valid, real result if B's x-term coefficient is smaller than A's
- ☐ D. No, negative results always mean the brackets were written wrong

Q23. Subtract $(2x^2 - 3x + 1)$ from $(5x^2 + 4x - 2)$. (x^2 means x squared.)

- ☐ A. $3x^2 + 7x - 3$
- ☐ B. $3x^2 + x - 3$
- ☐ C. $7x^2 + 7x - 3$
- ☐ D. $3x^2 + 7x + 3$

Q24. Identical teal and maroon expressions subtracted. What remains?

$$\boxed{2x-3y+4} - \boxed{2x-3y+4}$$

- ☐ A. $4x - 6y + 8$
- ☐ B. 0
- ☐ C. 4
- ☐ D. $2x - 3y$

Q25. Two expressions are equal for EVERY value substituted. What does this tell you about their simplified algebraic forms?

- ☐ A. They must be algebraically identical, not just numerically equal by coincidence
- ☐ B. Nothing at all can be concluded
- ☐ C. They must differ only in their constant term
- ☐ D. They must have opposite signs

Q26. Subtract $(3a - 2b + c)$ from $(a - b + c)$.

- ☐ A. $2a - b$
- ☐ B. $-2a + b + 2c$
- ☐ C. $4a - 3b + 2c$
- ☐ D. $-2a + b$

Q27. Start $3x+2y$, goal $10x+5y$. What must be added?

start $3x+2y$

goal $10x+5y$

- ☐ A. $13x + 7y$
- ☐ B. $7x + 7y$
- ☐ C. $3x + 2y$

☐ D. $7x + 3y$

Q28. Why does distributing a minus sign follow the exact same logic as multiplying every term inside a bracket by -1 ?

- ☐ A. Because subtracting a bracket IS mathematically the same operation as multiplying its contents by -1 and adding the result
- ☐ B. They are unrelated ideas that happen to look similar
- ☐ C. Because multiplication by -1 only works on single terms
- ☐ D. Because subtraction and multiplication are the same operation

Q29. Subtract $(5p^2 - 2p + 3)$ from $(5p^2 + 6p - 1)$.

- ☐ A. $10p^2 + 4p + 2$
- ☐ B. $8p + 2$
- ☐ C. $8p - 4$
- ☐ D. $4p - 4$

Q30. A grouping error after a correct minus: what does a number-check catch?

- ☐ A. It only catches sign-flip errors, never grouping errors
- ☐ B. It checks the final result, catching either kind of error
- ☐ C. It cannot catch this kind of mistake at all
- ☐ D. It only works if the mistake happens in the first term

Answer Key

Q1: (D) (d) $5x$. $8x - 3x = 5x$.

Q2: (B) (b) $A - B$.

Q3: (A) (a) $5a + 2b$. $(7a-2a)+(5b-3b)$.

Q4: (A) (a) $6y$. $10y - 4y = 6y$.

Q5: (B) (b) The minus sign must apply to every term in the bracket.

Q6: (C) (c) $4p + 4q$. $(6p-2p)+(3q-(-q))=(4p)+(4q)$.

Q7: (D) (d) 0. Any term minus itself is zero.

Q8: (C) (c) $A + B$ — two minuses make a plus.

Q9: (A) (a) Replacing a letter with a specific number, to check or evaluate an expression.

Q10: (B) (b) 0. Identical expressions cancel completely.

Q11: (A) (a) $2x + 6y$. $(5x-3x)+(4y-(-2y)) = 2x+6y$.

Q12: (C) (c) If the two expressions disagree once numbers are substituted, a genuine mistake was made somewhere in the simplification.

Q13: (B) (b) $5m + 5n$. $(9m-4m)+(2n-(-3n)) = 5m+5n$.

Q14: (A) (a) 26. $2(10)+6(1)=20+6=26$, matching the original expression's value.

Q15: (A) (a) 0. Identical expressions subtract to zero.

Q16: (C) (c) $4a + 3b$. $(6a-2a)+(-2b-(-5b)) = 4a+3b$.

Q17: (D) (d) $a + 2b + 2c$. $(2a-a)+(b-(-b))+(c-(-c)) = a+2b+2c$.

Q18: (B) (b) $3x + 5$. $(8x-5x)+(2-(-3)) = 3x+5$.

Q19: (D) (d) $-4p + 5q$. $(3p-7p)+(9q-4q) = -4p+5q$.

Q20: (B) (b) $2x - y + 4z$. $(5x-3x)+(y-2y)+(3z-(-z)) = 2x-y+4z$.

Q21: (B) (b) $6x + 2$. Perimeter minus one pair's sum: $(10x+4)-(4x+2)=6x+2$.

Q22: (C) (c) Not necessarily — a genuinely smaller starting coefficient can legitimately produce a negative result; it isn't automatically an error.

Q23: (A) (a) $3x^2 + 7x - 3$. Group by matching powers: x^2 ($5-2=3$), x ($4-(-3)=7$), constants ($-2-1=-3$).

Q24: (B) (b) 0. Any expression minus itself is always zero.

Q25: (A) (a) If two expressions agree for every possible substituted value, they are genuinely the same expression algebraically, not merely coincidentally equal once.

Q26: (D) (d) $-2a + b$. $(a-3a)+(-b-(-2b))+(c-c) = -2a+b+0$.

Q27: (D) (d) $7x + 3y$. $(10x+5y) - (3x+2y) = 7x+3y$, the amount that must be added.

Q28: (A) (a) Subtracting a bracketed expression is mathematically identical to multiplying every term inside by -1 and then adding — that's exactly why every sign inside flips.

Q29: (C) (c) $8p - 4$. p^2 terms cancel ($5-5=0$); p terms: $6-(-2)=8$; constants: $-1-3=-4$.

Q30: (B) (b) Substituting numbers checks the FINAL simplified result against the original, so it catches any mistake in the whole process — sign flips or grouping — not just one specific step.

You've got this! Keep learning and shining! - Ruchi Math Coaching