

Boost Free Lessons - Year 8 Maths

Lesson 6: Expanding Expressions and Simplifying

Name: _____ Grade: _____ Date: _____

Worked Example 1

Expand $3(x + 4)$

1. The 3 outside multiplies **every** term inside the brackets, not just the first.
2. $3 \times x = 3x$.
3. $3 \times 4 = 12$.

$= 3x + 12$

Worked Example 2

Expand and simplify $2(x + 5) + 3(x - 1)$

1. Expand each bracket separately: $2(x + 5) = 2x + 10$.
2. $3(x - 1) = 3x - 3$.
3. Now collect the like terms: $2x + 3x = 5x$, and $10 - 3 = 7$.

$= 5x + 7$

Remember: The term outside multiplies everything inside the brackets. Watch the signs: a minus outside the brackets changes the sign of every term inside.



Question 1: Expand the following.

1. $2(x + 3)$

2. $5(y - 2)$

3. $4(a + 6)$

4. $3(2m + 1)$

5. $7(k - 4)$

6. $x(x + 5)$

7. $-2(p + 3)$

8. $6(3 - t)$

9. $2a(a + 4)$

10. $-5(2w - 3)$



Question 2: Expand and simplify the following.

1. $2(x + 1) + 3(x + 4)$

2. $4(m - 2) + 2(m + 5)$

3. $3(a + 2) - (a + 5)$

4. $5(y - 1) - 2(y - 3)$

5. $2(3k + 1) + 4(k - 2)$

6. $x(x + 2) + 3(x + 1)$

7. $6(p + 2) - 3(2p + 1)$

8. $4(2t - 3) - 2(3t - 5)$



Question 3: Answer the following questions.

1. A rectangle has length $(x + 3)$ and width 4. Write an expression for its area and expand it.
2. Expand and simplify $3(2x + 5) - 2(x + 4)$.
3. A rectangle has length $(2y + 1)$ and width 5. Write an expression for its perimeter and simplify it.
4. Expand and simplify $a(b + c) + b(a - c)$.
5. Show that $2(x + 3) + 2(x - 3)$ simplifies to $4x$.





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Answers: Expanding Expressions and Simplifying**Question 1**

1. $2x + 6$

2. $5y - 10$

3. $4a + 24$

4. $6m + 3$

5. $7k - 28$

6. $x^2 + 5x$

7. $-2p - 6$

8. $18 - 6t$

9. $2a^2 + 8a$

10. $-10w + 15$

Question 2

1. $5x + 14$

2. $6m + 2$

3. $2a + 1$

4. $3y + 1$

5. $10k - 6$

6. $x^2 + 5x + 3$

7. 9

8. $2t - 2$

Question 3

1. $4(x + 3) = 4x + 12$

2. $4x + 7$

3. $2(2y + 1) + 2(5) = 4y + 12$

4. $2ab + ac - bc$

5. $2x + 6 + 2x - 6 = 4x$

