Year 8 expanding brackets worksheet

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Name: _____ Date: _____

Question 1

Expand and simplify 3(2x + 5) - 4x + 7.

Answer: _____

Question 2

Expand and simplify the expression 4(3x + 2) + 5x.

Answer: _____

Question 3

Expand:

(a) 3(x + 4)

(b) 5(2a - 1)

Answer: _____

Question 4

Expand:

(a) -2(x + 7)

(b) -4(3 - 2y)

(c) -(5m - 6)

Answer: _____

Question 5

Expand and simplify:

(a) 3(x + 2) + 4(x - 1)

(b) 5(2a + 3) - 2(a - 4)

(c) 4(3y - 1) - (y + 5)

Answer: _____

Question 6

Show that 2(3x - 4) + 2(x + 1) simplifies to 8x - 6, and then write 8x - 6 in factorised form.

Answer: _____

Question 7

Max expanded -3(2x - 5) and wrote -6x - 15. Explain Max's mistake and give the correct expansion.

Answer: _____

Question 8

Expand and simplify:

(a) 2(3a - 4b) - 3(a - 2b) + b

(b) ½(4x + 6) - ⅓(9x - 3)

Answer: _____

Question 9

Each expansion below contains an error. Explain the error and write the correct expansion.

(a) 3(x + 4) = 3x + 4

(b) -2(x - 5) = -2x - 10

Answer: _____

Year 8 expanding brackets: answers and worked solutions

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Question 1

Key idea: Use the distributive law to expand the bracket first, then collect like terms.

1. Expand the bracket: 3(2x + 5) = 6x + 15 2. Rewrite the full expression: 6x + 15 - 4x + 7 3. Collect the x terms: 6x - 4x = 2x 4. Collect the constant terms: 15 + 7 = 22 5. Write the simplified answer: 2x + 22

Answer: 2x + 22

Question 2

Key idea: The distributive law states a(b + c) = ab + ac. After expanding, collect like terms by adding the coefficients of x.

1. Expand the bracket: 4(3x + 2) = 12x + 8 2. Rewrite the full expression: 12x + 8 + 5x 3. Identify like terms: 12x and 5x are like terms; 8 is a constant. 4. Collect like terms: 12x + 5x = 17x 5. Write the simplified expression: 17x + 8

Answer: 17x + 8

Question 3

Answer: (a) 3x + 12 (b) 10a - 5

Question 4

Answer: (a) -2x - 14 (b) -12 + 8y (or 8y - 12) (c) -5m + 6 (or 6 - 5m)

Question 5

Answer: (a) 7x + 2 (b) 8a + 23 (10a + 15 - 2a + 8) (c) 11y - 9 (12y - 4 - y - 5)

Question 6

Answer: 6x - 8 + 2x + 2 = 8x - 6; factorised: 2(4x - 3)

Question 7

Answer: Max multiplied -3 by -5 and got -15, but a negative times a negative is positive, so it is +15. Correct expansion: -6x + 15.

Question 8

Answer: (a) 3a - b (6a - 8b - 3a + 6b + b) (b) -x + 4 (or 4 - x) (2x + 3 - 3x + 1)

Question 9

Answer: (a) The 4 was not multiplied by 3: 3x + 12 (b) -2 × -5 = +10, not -10: -2x + 10