Year 7 expanding brackets worksheet

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Name: _____ Date: _____

Question 1

Expand 3(x + 5).

Answer: _____

Question 2

Expand and simplify 4(2x + 3) - 2(x - 1).

Answer: _____

Question 3

Expand and simplify: 4(2x + 3) + 5x

Answer: _____

Question 4

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

Answer: _____

Question 5

Expand 4(x + 6).

Answer: _____

Question 6

Expand 5(2a - 3).

Answer: _____

Question 7

Expand and simplify 3(x + 4) + 2(x - 1).

Answer: _____

Question 8

Factorise 12x + 18 by taking out the highest common factor.

Answer: _____

Question 9

(a) Show that 4(2x + 3) - 2(x + 1) simplifies to 6x + 10.

(b) Find the value of the expression when x = 5.

Answer: _____

Year 7 expanding brackets: answers and worked solutions

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Question 1

Key idea: The distributive law says a(b + c) = ab + ac. Multiply the term outside the brackets by every term inside.

1. Multiply 3 by x: 3 × x = 3x 2. Multiply 3 by 5: 3 × 5 = 15 3. Write the expanded expression: 3x + 15

Answer: 3x + 15

Question 2

Key idea: Expand each bracket separately using the distributive law, taking care with the negative sign, then collect like terms.

1. Expand 4(2x + 3): 4 × 2x + 4 × 3 = 8x + 12 2. Expand -2(x - 1): -2 × x + (-2) × (-1) = -2x + 2 3. Write the full expression: 8x + 12 - 2x + 2 4. Collect like terms: (8x - 2x) + (12 + 2) = 6x + 14

Answer: 6x + 14

Question 3

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

1. Expand the bracket: 4(2x + 3) = 4 × 2x + 4 × 3 = 8x + 12 2. Rewrite the full expression: 8x + 12 + 5x 3. Identify like terms: 8x and 5x are like terms; 12 is a constant. 4. Collect like terms: 8x + 5x = 13x 5. Write the simplified expression: 13x + 12

Answer: 13x + 12

Question 4

Key idea: Expand each bracket using the distributive law, taking care with the negative sign, then collect like terms.

1. Expand 5(3x + 2): 5 × 3x + 5 × 2 = 15x + 10 2. Expand -3(x - 4): -3 × x + (-3) × (-4) = -3x + 12 3. Write the full expression: 15x + 10 - 3x + 12 4. Collect like terms: (15x - 3x) + (10 + 12) = 12x + 22

Answer: 12x + 22

Question 5

Answer: 4x + 24

Question 6

Answer: 10a - 15

Question 7

Answer: 5x + 10 (3x + 12 + 2x - 2)

Question 8

Answer: 6(2x + 3)

Question 9

Answer: (a) 8x + 12 - 2x - 2 = 6x + 10 (b) 40