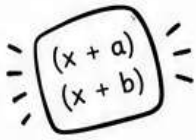


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Factoring Quadratics Worksheet

Factor each quadratic expression. Show your work where needed.



1. Factor the quadratic expressions (trinomial form).

- a) $x^2 + 7x + 12 =$ _____
- b) $x^2 + 5x + 6 =$ _____
- c) $x^2 - 8x + 15 =$ _____
- d) $x^2 - 3x - 10 =$ _____
- e) $x^2 + 9x + 20 =$ _____
- f) $x^2 - 6x + 8 =$ _____

2. Factor the quadratic expressions (leading coefficient not 1).

- a) $2x^2 + 7x + 3 =$ _____
- b) $3x^2 - 5x - 2 =$ _____
- c) $4x^2 + 12x + 9 =$ _____
- d) $5x^2 - 8x + 3 =$ _____
- e) $6x^2 + 11x + 4 =$ _____
- f) $7x^2 - 10x + 3 =$ _____

3. Factor by grouping.

- a) $x^2 + 7x + 6x + 42 =$ _____
- b) $2x^2 + 5x + 3x + 6 =$ _____
- c) $3x^2 - 6x + 9x - 18 =$ _____
- d) $4x^2 + 12x + 3x + 9 =$ _____
- e) $5x^2 - 10x + 2x - 4 =$ _____
- f) $6x^2 + 9x - 4x - 6 =$ _____

4. Factor perfect square trinomials.

- a) $x^2 + 10x + 25 =$ _____
- b) $x^2 - 12x + 36 =$ _____
- c) $4x^2 + 4x + 1 =$ _____
- d) $9x^2 - 6x + 1 =$ _____
- e) $16x^2 + 8x + 1 =$ _____
- f) $25x^2 - 20x + 4 =$ _____

5. Factor the following (difference of squares).

- a) $x^2 - 9 =$ _____
- b) $4x^2 - 16 =$ _____
- c) $9x^2 - 25 =$ _____
- d) $16x^2 - 81 =$ _____
- e) $49x^2 - 36 =$ _____
- f) $25 - 10x + x^2 =$ _____

6. Factor the quadratic expression completely.

- a) $2x^2 - 3x - 5 =$ _____
- b) $x^2 + 4x - 12 =$ _____
- c) $3x^2 + 10x + 8 =$ _____
- d) $4x^2 - 8x - 5 =$ _____
- e) $6x^2 + x - 15 =$ _____
- f) $5x^2 - 13x - 6 =$ _____

7. Solve the quadratic equations by factoring.

- a) $x^2 + 5x + 6 = 0 \rightarrow x =$ _____, _____
- b) $x^2 - 9x + 20 = 0 \rightarrow x =$ _____, _____
- c) $2x^2 + 7x + 3 = 0 \rightarrow x =$ _____, _____
- d) $x^2 - 4x - 12 = 0 \rightarrow x =$ _____, _____
- e) $3x^2 + 5x - 2 = 0 \rightarrow x =$ _____, _____
- f) $4x^2 - 12x + 9 = 0 \rightarrow x =$ _____, _____

8. Word Problems.

- a) The area of a rectangle is given by $x^2 + 5x + 6 = 0$. Find the possible values of x .
Answer: _____
- b) The product of two consecutive integers is 72. Find the integers.
Answer: _____
- c) A number is such that its square minus 9 is zero. Find the number.
Answer: _____

9. Challenge! Factor the following (if possible).

- a) $x^2 + 4x + 5 =$ _____
- b) $2x^2 + 2x + 1 =$ _____
- c) $3x^2 - 2x - 1 =$ _____
- d) $6x^2 + 7x + 2 =$ _____
- e) $8x^2 - 18x + 9 =$ _____
- f) $x^2 - 2x + 5 =$ _____

