

Algebra 1 - Factoring Polynomials - Quiz

Common Core A-SSE.A.2, A-SSE.B.3a, A-APR.B.3 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Check what you know about factoring polynomials with 10 multiple-choice questions (A-SSE.A.2, A-SSE.B.3a, and A-APR.B.3). Each question has one correct answer, and the explanation points out the common error behind the wrong choices. Use the results to decide what to practice next.

Algebra 1 · Common Core State Standards: **A-SSE.A.2, A-SSE.B.3a, A-APR.B.3**

Questions

Question 1

What is the GCF of $18x^2$ and $24x$?

- A. 6
- B. $6x$
- C. $12x$
- D. $3x^2$

Question 2

Factor x^2+5x+6 .

- A. $(x+1)(x+6)$
- B. $(x+2)(x+3)$
- C. $(x-2)(x-3)$
- D. $(x+5)(x+1)$

Question 3

Factor $x^2-2x-15$.

- A. $(x+5)(x-3)$
- B. $(x-5)(x-3)$
- C. $(x+15)(x-1)$
- D. $(x-5)(x+3)$

Question 4

	x	5
x	x^2	$5x$
2	$2x$	10

The area model gives $x^2+7x+10$. What are its factors?

- A. $(x+2)(x+5)$
- B. $(x+1)(x+10)$
- C. $(x+7)(x+10)$
- D. $(x-2)(x-5)$

Question 5

Factor x^2-100 .

- A. $(x-10)^2$
- B. $(x+10)^2$
- C. $(x-50)(x+2)$
- D. $(x-10)(x+10)$

Question 6

Factor $x^2-16x+64$.

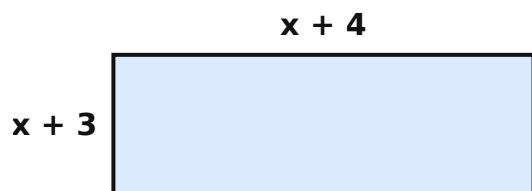
- A. $(x-8)(x+8)$
- B. $(x-8)^2$
- C. $(x-16)(x-4)$
- D. $(x+8)^2$

Question 7

Factor $3x^2+6x$ completely.

- A. $3(x^2+2x)$
- B. $x(3x+6)$
- C. $3x(x+2)$
- D. $3x(x+6)$

Question 8



Which trinomial gives the area of the rectangle?

- A. $x^2 + 12$
- B. $x^2 + 7x + 7$
- C. $x^2 + 7x + 12$
- D. $2x + 14$

Question 9

Which are the zeros of $f(x) = (x - 3)(x + 8)$?

- A. $x = 3$ and $x = -8$
- B. $x = -3$ and $x = 8$
- C. $x = 3$ and $x = 8$
- D. $x = -3$ and $x = -8$

Question 10

Expression	Value at $x = 6$
$x^2 - 4$	32
$(x - 2)(x + 2)$	32

The table shows that $x^2 - 4$ and $(x - 2)(x + 2)$ agree at $x = 6$. What does this suggest?

- A. They are equivalent expressions
- B. They are never equal
- C. They are equal only at $x = 6$
- D. The first is a perfect square

Answers

1. **B** - The GCF of 18 and 24 is 6, and the lowest power of x is x^1 .
2. **B** - The numbers 2 and 3 multiply to 6 and add to 5.
3. **D** - Product -15 and sum -2 give -5 and 3. Check the middle term: $3x - 5x = -2x$.
4. **A** - The side lengths are $x + 2$ and $x + 5$, because $5x + 2x = 7x$ and $5 \times 2 = 10$.
5. **D** - A difference of squares factors as a sum times a difference.
6. **B** - $64 = 8^2$ and $2(8) = 16$, so it is a perfect square trinomial with a negative middle term.
7. **C** - Factor out the greatest common factor $3x$. The other choices leave a common factor in the parentheses.
8. **C** - $(x + 4)(x + 3) = x^2 + 3x + 4x + 12$.
9. **A** - Set each factor equal to 0: $x - 3 = 0$ gives 3 and $x + 8 = 0$ gives -8.
10. **A** - Factoring does not change the value. The two expressions are equal for every x , as the difference of squares shows.

Remember

- Factor out the greatest common factor (GCF) first.
- For $x^2 + bx + c$, find two numbers with product c and sum b .
- Difference of squares: $a^2 - b^2 = (a + b)(a - b)$.
- Perfect square trinomials: $a^2 \pm 2ab + b^2 = (a \pm b)^2$.
- If a product is zero, one of its factors is zero, so factored form shows the zeros.