

Algebra 1 SOL Released Questions:

Factor Polynomials

Which is a factored form of the following expression?

$$5x^2 - 20x$$

- F  $5(x^2 - 4)$
- G  $5(x - 2)^2$
- H  $5x(x - 4)$
- J  $(5x - 4)(x + 5)$

2007

Which binomial is a factor of the following expression?

$$2x^2 + x - 1$$

- A  $x - 1$
- B  $2x + 2$
- C  $2x - 1$
- D  $2x + 1$

2007

Directions: Click on the boxes to choose the factors you want to select.

When factored completely, identify the factors of this polynomial.

$$9x^2 - 39x - 30$$

3	$3x - 15$	$3x - 2$	$x - 5$
9	$9x + 6$	$3x + 2$	$x + 5$

FIG 2009

What is the complete factorization of  $x^2 - 5x - 14$  ?

- F  $(x - 2)(x + 7)$
- G  $(x + 2)(x - 7)$
- H  $(x - 1)(x + 14)$
- J  $(x + 1)(x - 14)$

2010

Which represents the *complete* factorization of  $3v^2 + 9v$  ?

- A  $v(3v + 9)$
- B  $3(v^2 + 3v)$
- C  $3v(v + 3)$
- D  $3v^2(1 + 3v)$

2010

Which of the following equals  $3x^2 - 10x - 8$  when factored completely?

- F  $(3x-4)(x+2)$
- G  $(3x-1)(x+8)$
- H  $(3x+8)(x-1)$
- J  $(3x+2)(x-4)$

2009

A factored form of  $x^2 + 5x - 24$  is —

- A  $(x-4)(x+6)$
- B  $(x-3)(x+8)$
- C  $(x-2)(x+12)$
- D  $(x-6)(x+4)$

2009

Which is a factored form of the following expression?

$$2x^2 - 6x$$

- F  $2(x^2 - 3)$
- G  $2x(x - 3)$
- H  $2x(1 - 3x)$
- J  $(2x + 3)(x - 2)$

2008

Which is a factor of  $a^2 - 81$  ?

- F  $a + 3$
- G  $a + 9$
- H  $a + 27$
- J  $a + 81$

2008

Which is a factored form of the following expression?

$$5x^2 - 20x$$

- F  $5(x^2 - 4)$
- G  $5(x-2)^2$
- H  $5x(x-4)$
- J  $(5x-4)(x+5)$

2007

Which binomial is a factor of the following expression?

$$2x^2 + x - 1$$

- A  $x-1$
- B  $2x+2$
- C  $2x-1$
- D  $2x+1$

2007

When factored completely,  $x^2 - 9$  equals —

- F  $(x+3)^2$   
 G  $(x-3)^2$   
 H  $(x+1)(x-9)$   
 J  $(x+3)(x-3)$

2007

What are factors of  $2x^2 + 9x + 9$ ?

- A  $(x + 9)(x + 1)$   
 B  $(x - 3)(2x - 3)$   
 C  $(2x + 3)(x + 3)$   
 D  $(2x + 9)(x + 1)$

2008

$$x^2 - 81y^2 = ?$$

- F  $(x + 3y)(x - 27y)$   
 G  $(x - 9y)(x - 9y)$   
 H  $(x + 9y)(x - 9y)$   
 J  $(x - 3y)(x + 27y)$

2008

What is the greatest common monomial factor of

$$3x^3 + 6xy + 9x^2 + 12x^2y^2?$$

- A  $x^3y^2$   
 B  $3x^2y^2$   
 C  $3x$   
 D  $3$

2008

When completely factored,

$$x^2 - 7x + 10 \text{ equals —}$$

- F  $(x - 5)(x - 2)$   
 G  $(x - 3)(x - 4)$   
 H  $(x + 5)(x - 2)$   
 J  $(x + 4)(x + 6)$

2005

When  $5x^2 - 5$  is completely factored, which is one of its factors?

- A  $x + 1$   
 B  $x - 5$   
 C  $5x + 1$   
 D  $5x - 1$

2005

Which is one of the correct factors of

$$x^2 - 3x - 18?$$

- F  $(x - 2)$
- G  $(x + 6)$
- H  $(x - 9)$
- J  $(x + 3)$

2004

When factored completely,

$$x^2 - 9 \text{ equals —}$$

- A  $(x + 3)(x - 3)$
- B  $(x + 1)(x - 9)$
- C  $(x - 3)^2$
- D  $(x + 3)^2$

2004

What is one of the factors of

$$x^2 - 2x - 15?$$

- F  $(x - 3)$
- G  $(x - 5)$
- H  $(x + 1)$
- J  $(x + 15)$

2003

When completely factored,  
 $4 - 16x + 28y$  equals —

- A  $4(1 - 4x + 7y)$
- B  $4(1 - 4x) + 28y$
- C  $(4 - 7y)(1 + 4x)$
- D  $4 - 4(4x - 7y)$

2003

The area of a rectangle is represented  
by the expression

$$2x^2 + 5x + 2.$$

Which is an equivalent expression for  
this area?

- F  $(2x + 2)(x + 1)$
- G  $(2x + 3)(x + 2)$
- H  $(2x + 1)(x + 4)$
- J  $(2x + 1)(x + 2)$

2003

If the area of a rectangle can be  
represented by  $x^2 - 25$ , which could  
represent its length and width?

- F  $x - 5, x - 5$
- G  $x - 5, x + 5$
- H  $x^2, -25$
- J  $5, 5$

2002

Which is the complete factorization of  $2x^2 + 5x + 3$ ?

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

2002

Which shows  $y = 2x + 4$  in completely factored form?

- A  $y = 2(x + 4)$
- B  $y = (x + 2)^2$
- C  $y = 2(x + 2)$
- D  $y = (x + 2)(x - 2)$

2001

When completely factored,  $3x^2 - 48$  equals —

- A  $3(x^2 - 48)$
- B  $3(x^2 + 16)$
- C  $3(x - 4)(x + 4)$
- D  $(3x - 16)(x + 3)$

2001

When completely factored,  $x^2 + x - 12$  equals —

- A  $(x + 3)(x - 4)$
- B  $(x + 4)(x - 3)$
- C  $(x + 7)(x - 5)$
- D  $(x + 12)(x - 1)$

2001

One factor of  $5x^2 + 13x - 6$  is —

- F  $5x - 6$
- G  $5x - 1$
- H  $5x - 2$
- J  $5x - 3$

2001

Which is the complete factorization of the trinomial  $x^2 - x - 12$ ?

- A  $(x + 3)(x - 4)$
- B  $(x - 3)(x + 4)$
- C  $(x + 6)(x - 2)$
- D  $(x + 12)(x - 1)$

2000

**Which is the complete factorization of the trinomial  $3x^2 + 10x - 8$ ?**

**F**  $(3x + 2)(x - 4)$

**G**  $(x + 2)(3x - 4)$

**H**  $(x - 2)(3x + 4)$

**J**  $(3x - 2)(x + 4)$