

Algebra 1, Wk 3, Unit 6, Factoring Trinomials

1 The area of a rectangular garden is represented by the polynomial shown below.

$$x^2 + 19x - 42$$

What are the dimensions (length and width) of the rectangular garden?

- A  $(x + 21)$  and  $(x - 2)$   $a=1$   $\begin{array}{r|l} -42 & 19 \\ a \cdot c & b \end{array}$   $(x-2)(x+21)$
- B  $(x - 21)$  and  $(x + 2)$   $b=19$
- C  $(x + 42)$  and  $(x - 1)$   $c=-42$   $\begin{array}{r|l} -1 & 42 \\ -2 & 21 \\ \hline & 19 \end{array}$   $19 \checkmark$
- D  $(x - 6)$  and  $(x + 7)$

2 Ross is working on a project for art class using a computer graphics program. Ross wants to create a rectangular framework for the final graphic. The area to be enclosed by the framework is represented by the expression  $5x^2 + 8x - 4$ . What expressions can be used to represent the length and width of the rectangular framework?

- F  $(x - 2)$  and  $(5x + 2)$   $a=5$   $\begin{array}{r|l} -20 & 8 \\ a \cdot c & b \end{array}$   $(x-2)(x+10)$
- G  $(x + 4)$  and  $(5x - 1)$   $b=8$
- H  $(x + 2)$  and  $(5x - 2)$   $c=-4$   $\begin{array}{r|l} -1 & 20 \\ -2 & 10 \\ \hline & 8 \end{array}$   $8 \checkmark$   $(5x-2)(x+2)$
- J  $(x + 1)$  and  $(5x - 4)$

3 Which expression is a factor of  $x^2 - 3x - 4$ ?

- F  $x - 1$   $a=1$
- G  $x + 2$   $b=-3$
- H  $x - 2$   $c=-4$   $\begin{array}{r|l} -4 & -3 \\ a \cdot c & b \end{array}$   $(x+1)(x-4)$
- J  $x - 4$

4 Which factors, if any, best represent  $6x^2 - 11x - 3$ ?

- A  ~~$(3x - 1)(2x + 3)$~~   $a=6$   $\begin{array}{r|l} -18 & -11 \\ a \cdot c & b \end{array}$   $-11$  *checked Graph*
- B  ~~$(3x + 1)(2x - 3)$~~   $b=-11$   $-17$  *Factors Do Not*
- C  ~~$(3x - 1)(2x - 3)$~~   $c=-3$   $-7$  *Go Through zeros*
- D None of the above  $\begin{array}{r|l} 2 & -9 \\ 3 & -6 \\ \hline & -3 \end{array}$

5 Which function is equivalent to  $f(x) = 6x^2 - 13x + 5$ ?

F  $f(x) = (3x - 1)(2x + 5)$

G  $f(x) = (3x - 5)(2x - 1)$

H  $f(x) = (3x - 1)(2x - 5)$

J  $f(x) = (3x - 1)(2x + 5)$

Calc  
 $(3x-5)(2x-1)$   
 $6x^2 - 3x - 10x + 5$   
 $6x^2 - 13x + 5$

Calc  
 • Graph  $6x^2 - 13x + 5$   
 • Graph Factor  
 • Line Goes Through Zeros

6 Which expression is equivalent to  $2x^2 + 7x + 4$ ?

A  $(2x - 1)(x + 4)$

B  $(2x + 1)(x - 4)$

C  $(2x + 1)(x + 4)$

D None of these

$a=2$   
 $b=7$   
 $c=4$

8	7
a.c	b
1 8	7
2 4	6

$(x+4)(x+1)$   
 $(x+2)(x+1)$   
 $(x+1)(x+4)$

7 Which expression is a factor of  $x^2 - 5x - 6$ ?

F  $x - 6$

G  $x - 2$

H  $x - 3$

J  $x - 1$

$a=1$   
 $b=-5$   
 $c=-6$

-6	-5
a.c	b
1 -6	-5

$(x+1)(x-6)$

8 Factor the following binomial:  $4x^2 - 16$

A  $(x + 4)(x - 4)$

B  $(x + 4)(4x - 4)$

C  $4(x + 2)(x - 2)$

D  $-4(x^2 + 4)$

GCF  $\frac{4}{4}$   
 $4(x^2 - 4)$   
 $a=1$   
 $b=\phi$   
 $c=-4$

-4	$\phi$
a.c	b
1 -4	-3
2 -2	$\phi$

$(x+2)(x-2)$

$4(x+2)(x-2)$   
 ↑  
 GCF

9 Jason was asked to factor  $25x^2 - 1$  on his algebra test. Which of the following could best reflect Jason's answer?

F  $(5x - 1)(5x - 1)$

G  $(5x + 1)(5x + 1)$

H  $(5x + 1)(5x - 1)$

J Prime

$(5x+1)(5x-1)$   
 $25x^2 - 5x + 5x - 1$   
 $25x^2 - 1$

Calc  
 • Graph  $25x^2 - 1$   
 • Graph Factors  
 • Lines Go Through Zeros