Algebra 1 | Unit7: Quadratic Expression | Practice

**Day 7 – Factor Trinomials (-, - & +, -)**
**Practice Assignment**

**Name:** _____
**Date:** _____ **Block:** _____

**Factor the expressions:**

1. $x^2 + 3x - 4$

~~$(x+4)(x-1)$~~

$a=1 \quad b=3 \quad c=-4$

$-4$, $4$, $-1$, $3$

$\frac{4}{1} \quad \frac{-1}{1}$

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

2. $2x^2 + x - 10$

~~[illegible]~~

$a=2 \quad b=1 \quad c=-10$

$-20$, $-4$, $5$, $1$

$\frac{-4}{2} \quad \frac{5}{2}$

$\frac{-2}{1} \quad \frac{5}{2}$

$(x-2)(2x+5)$

3. $2x^2 + 6x - 8$

~~$(2x)(x-1)$~~

$2(x^2+3x-4)$

$a=1 \quad b=3 \quad c=-4$

$-4$, $4$, $-1$, $3$

$\frac{4}{1} \quad \frac{-1}{1}$

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

4. $x^2 - 2x - 48$

$(x+6)(x-8)$

$a=1 \quad b=-2 \quad c=-48$

$-48$, $6$, $-8$, $-2$

$\frac{6}{1} \quad \frac{-8}{1}$

$(x+6)(x-8)$

5. $7x^2 - 34x - 5$

$a=7 \quad b=-34 \quad c=-5$

$-35$, $1$, $35$, $-34$

$\frac{1}{7} \quad \frac{-35}{7} = \frac{-5}{1}$

$(7x+1)(x-5)$

6. $4x^2 + 20x - 144$

$4(x^2+5x-36)$

$a=1 \quad b=5 \quad c=-36$

$-36$, $-4$, $9$, $5$

$\frac{-4}{1} \quad \frac{9}{1}$

$4(x-4)(x+9)$

7. $5x^2 + 17x - 12$

$a=5 \quad b=17 \quad c=-12$

$-60$, $-3$, $20$, $17$

$\frac{-3}{5} \quad \frac{20}{5}$

$\frac{-3}{5} \quad \frac{4}{1}$

$(5x-3)(x+4)$

8. $x^2 + 5x - 14$

$a=1 \quad b=5 \quad c=-14$

$-14$, $7$, $-2$, $5$

$\frac{7}{1} \quad \frac{-2}{1}$

$(x+7)(x-2)$

9. $2x^2 + 14x - 60$

$2(x^2+7x-30)$

$a=1 \quad b=7 \quad c=-30$

$-30$, $-3$, $10$, $7$

$\frac{-3}{1} \quad \frac{10}{1}$

$2(x-3)(x+10)$

10. Which of the following b values makes the trinomial $x^2 + bx - 30$ not factorable?

A. 7
B. -7
C. 1
D. 11

-30
-3 10
7

-30
3 -10
-7

-30
6 -5
1

-30
none none
11

11. Determine the values of *k* and *n*.

a. $(x + 4)(x + k) = x^2 + nx - 24$

$4 \cdot k = -24$

$k = \frac{-24}{4}$

$k = -6$

$(x+4)(x-6)$

$-6x + 4x = -2x$

k = -6
n = 2

b. $(x + k)(x - 1) = x^2 + nx - 5$

$k \cdot -1 = -5$

$k = 5$

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

$-x + 5x = 4x$

$n = 4$

c. $(x + 5)(x + n) = x^2 + 3x - n$

$x^2 + xn + 5x$

$nx + 5x = 3x$

$n = -2$

$(x+5)(x-2)$

$5 \cdot -2 = -10$

$(x+5)(x-2) = x^2 + 3x - 10$

12. If the area of a rectangle is $A = x^2 + 4x - 12$, answer the following:

a. What are the side lengths of the rectangle?

$x^2 + 4x - 12$

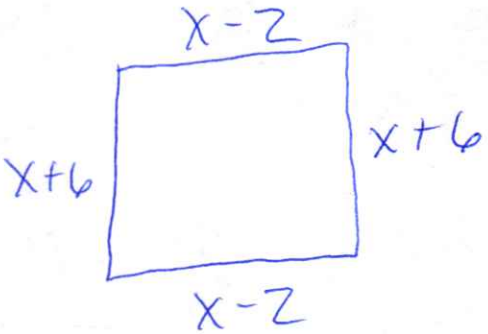
$a = 1$
$b = 4$
$c = -12$

-12
6 -2
4

$\frac{6}{1}$ $\frac{-2}{1}$

$(x+6)(x-2)$

b. What is the perimeter of the rectangle?




$x+6$
$x+6$
$x-2$
$+ \quad x-2$

$P = 4x + 8$