Factoring Application Homework Name: _____

Apply your understand of factoring trinomials to find all possible integer values of k.

1. $x^2 + kx - 30$

to -30	add to K
1, -30	-29
1, 30	29
2, -15	-13
2, 15	13
3, -10	-7
3, 10	7
5 -6	-1
5 6	1

2. $2x^2 + kx + 20$

* to 40	Add to K
1, 40	41
-1, -40	-41
2, 20	22
-2, -20	-22
4, 10	14
-4 -10	-14
5 8	13
-5 -8	-13

Apply your understand of factoring trinomials to find at least four possible integer values of k.

3. $x^2 + 17x + k$ * Answers may vary

add to 17	multiply to K
1, 16	16
2, 15	30
3, 14	42
4, 13	52

4. $x^2 - 18x + k$

add to -18	multiply to K
-1, -17	17
-2, -16	32
-3, -15	45
-4, -14	56

5. The area of a rectangle can be expressed as $x^2 - 8x - 33$. Rewrite the area as two binomials.

$(x-11)(x+3)$

(X-11) by (x+3) units^2

6. A square has an area of $x^2 + 14x + 49$. Find the length of the side of a square.

$(x+7)^2$ ← side = (x+7) units

7. A garden has an area of $81x^2 - 36$. Find the dimensions of the garden and write them as two binomials.

$9(9x^2-4)$

$9(3x-2)(3x+2)$

or

$(9x-6)(9x+6)$

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

9(3x-2) by (3x+2) units or 9(3x+2) by (3x-2) units

or

3(3x-2) by 3(3x+2) units

8. The area of a junk yard is $6x^2 - 7x - 5$. Find the length and width of the junk yard. Then, find the perimeter of the junk yard.

$(6x^2 - 10x)(3x - 5)$

$2x(3x-5) + 1(3x-5)$

$(2x+1)(3x-5)$

(2x+1) units by (3x-5) units

perimeter

$2(2x+1) + 2(3x-5)$

$4x + 2 + 6x - 10$

$10x - 8$ units

9. The volume of a pool is expressed by $x^3 + 3x^2 - 4x - 12$. Find the dimensions of the pool.

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

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

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

(x+2) by (x-2) by (x+3) units