Algebra 1 Name KEY ID: 1

9.5b Kuta Factoring

Date _____ Period ____

Factor. For each problem write the Factors of "C." Mentally CHECK by MULTIPLYING.

1) $x^2 - 3x - 70$

$(x-10)(x+7)$

1 70
2 35
5 14
7 10

2) $x^2 + 5x - 14$

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

3) $x^2 - 12x + 35$

$(x-7)(x-5)$

4) $x^2 - 13x + 30$

$(x-10)(x-3)$

Factor the common factor out of each expression.

5) $10n^3 - 25n^2 + 25n$

$5N(2N^2 - 5N + 5)$

6) $12n^7 + 6n^4 - 30n^3$

~~$3N^3(4N^4 + 2N - 10)$~~

$6N^3(2N^4 + N - 5)$

MUST BE The greatest common FACTOR

7) $-n^3 - 4n^2 + 8n$

-LC

$-N(N^2 + 4N - 8)$

8) $-10n^3 + 30n^2 - 5n$

-LC

$-5N(2N^2 - 6N + 1)$

When Leading Coef (LC) is Negative ALWAYS factor out the negative in the GCF

① ②

Factor and solve each equation

9) $n^2 - 6n + 8 = 0$

$(N-4)(N-2) = 0$

$N = 4$ $N = 2$

C: 0 = 0 ✓ C: 0 = 0 ✓

10) $x^2 + 4x - 5 = 0$

$(x+5)(x-1) = 0$

$X = -5$ $X = 1$

C: 0 = 0 ✓ C: 0 = 0 ✓

11) $x^2 - 4x - 32 = 0$

$(X-8)(X+4) = 0$

$X = 8$ $X = -4$

C: 0 = 0 ✓ C: 0 = 0 ✓

12) $n^2 + 12n + 32 = 0$

$(N+4)(N+8) = 0$

$N = -4$ $N = -8$

C: 0 = 0 C: 0 = 0 ✓

Solve each equation by factoring.

13) $x^2 - 32 = -4x$

$x^2+4x-32=0$

$(x+8)(x-4)=0$

$x=-8$ $x=4$

C: $32=32$✓ C: $-16=-16$✓

STEPS!

14) $n^2 = -6n - 8$

$n^2+6n+8=0$ ← ① PUT IN $Ax^2+Bx+C=0$

$(n+4)(n+2)=0$ ← ② FACTOR

$n+4=0$ $n+2=0$ ③ SET = 0 & SOLVE

$n=-4$ $n=-2$

C: $16=16$✓ C: $4=4$✓

④ Check in ORIG EQ!

15) $n^2 = -3n$

STEP 1: ALWAYS LOOK FOR A GCF

$n^2+3n=0$

$n(n+3)=0$

$n=0$ $n+3=0$

$n=-3$

C: $0=0$✓ C: $9=9$✓

16) $n^2 = 4n$

$n^2-4n=0$

$n(n-4)=0$

$n=0$ $n-4=0$

$n=4$

C: $0=0$✓ C: $16=16$✓

*17) $x^2 = -12x - 36$

$x^2+12x+36=0$

$(x+6)(x+6)=0$

$x=-6$

C: $36=36$✓

* Repeated factor = 1 solution

*18) $x^2 + 14x = -49$

$x^2+14x+49=0$

$(x+7)(x+7)=0$

Repeated FACTOR 1 SOLUTION

$x+7=0$

$x=-7$

C: $-49=-49$✓

*19) $x^2 = 4x - 4$

$x^2-4x+4=0$

$(x-2)(x-2)=0$

$x=2$

C: $4=4$✓

20) $x^2 = -8 + 9x$

$x^2-9x+8=0$

$(x-8)(x-1)=0$

$x-8=0$ $x-1=0$

$x=8$ $x=1$

C: $64=64$✓ C: $1=1$✓