Challenge Algebra Name Key ID: 1

Solving Quadratics By Factoring 03

Date _____ Block ____

Solve each factored equation.

1) $(v+5)(v-2)=0$

$v+5=0$ $v-2=0$

$v=-5$ $v=2$

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

$x=-1$

$x=-5$

3) $(a-3)(6a-1)=0$

$a-3=0$ $a=3$

$6a-1=0$ $a=1/6$

4) $(n+3)(7n-5)=0$

$n=-3$

$n=5/7$

Solve each equation by factoring.

5) $x^2+4x+3=0$

$(x+1)(x+3)=0$

$x=-1$ $x=-3$

6) $k^2-5k-24=0$

$(k-8)(k+3)$

$k=-3$ $k=8$

7) $x^2+x-2=0$

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

$x=-2$ $x=1$

8) $a^2-64=0$

$(a+8)(a-8)$

$a=-8$ $a=8$

Solve each equation by factoring completely. (Hint: Start by setting equal to zero)

9) $x^2-6x=0$

$x(x-6)$

$x=0$ $x=6$

10) $b^2+12=-7b$

$b^2+7b+12=0$

$(b+3)(b+4)$

$b=-3$ $b=-4$

11) $m^2=-10+7m$

$m^2-7m+10$

$(m-2)(m-5)$

$m=2$

$m=5$

12) $3x^2+27=-18x$

$3x^2+18x+27=0$

$3(x^2+6x+9)=0$

$3(x+3)(x+3)$

$x=-3$

13) $6n^2 + 30n = 84$

$6n^2+30n-84$

$6(n^2+5n-14)$ $n=2$

$6(n+7)(n-2)$ $n=-7$

14) $3n^2 - 15 = -12n$

$3n^2+12n-15=0$ $n=1$

$3(n^2+4n-5)=0$ $n=-5$

$3(n+5)(n-1)$

15) $x^2 - 35 = -2x$

$x^2+2x-35=0$ $x=5$

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

16) $r^2 = r$

$r^2-r=0$

$r(r-1)=0$

$r=1$

17) $p^2 = -15p - 56$

$p^2+15p+56=0$

$(p+7)(p+8)$ $p=-7$

$p=-8$

18) $v^2 = 3 - 2v$

$v^2+2v-3=0$

$(v+3)(v-1)$

$v=1$ $v=-3$

CHALLENGE: Solve each equation by factoring completely. (Hint: Start by setting equal to zero first)

19) $x^2 + 40 = 13x$

$x^2-13x+40=0$

$(x-8)(x-5)$

$x=5$ $x=8$

20) $12n^2 + 96 = 40n + 8n^2$

$4n^2-40n+96=0$ $n=-2$

$4(n^2-10n+24)=0$ $n=12$

$4(n-12)(n+2)=0$

21) $n^2 + 2n - 84 = -n^2$

$2n^2+2n-84=0$ $n=6$

$2(n^2+n-42)=0$ $n=-7$

$2(n+7)(n-6)$

22) $3x^2 + 4x + 4 = 2x^2$

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

$(x+2)(x+2)=0$

$x=-2$

23) $a^2 - 4a = 21$

$a^2-4a-21=0$

$(a-7)(a+3)=0$

$a=-3$ $a=7$

24) $5k^2 + 6k + 7 = 2 + 4k^2$

$k^2+6k+5=0$

$(k+3)(k+2)$

$k=-2$ $k=-3$