CR/Algebra 2 Name_____

Factor, Square Root, Complete the Square Review Date_____ Period____

Solve each equation by factoring.

1) $(6b-5)(b-7)=0$

$6b-5=0 \quad b-7=0$

$b=\frac{5}{6} \quad b=7$

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

$x-1=0 \quad x+5=0$

$x=1 \quad x=-5$

3) $m^2-11m+24=0$

$(m-8)(m-3)=0$

$m-8=0 \quad m-3=0$

$m=8 \quad m=3$

4) $x^2+x-56=0$

$(x+8)(x-7)=0$

$x+8=0 \quad x-7=0$

$x=-8 \quad x=7$

5) $p^2-3p-2=2$

$p^2-3p-4=0$

$(p-4)(p+1)=0$

$p-4=0 \quad p+1=0$

$p=4 \quad p=-1$

6) $p^2+5p-11=3$

$-3 \quad -3$

$p^2+5p-14=0$

$(p+7)(p-2)=0$

$p+7=0 \quad p-2=0$

$p=-7 \quad p=2$

7) $5p^2+7p+2=0$

10, 2, 5, 7

	$5p$	1
$5p$	$5p^2$	$5p$
2	$2p$	2

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

$5p+2=0 \quad p+1=0$

$5p=-2 \quad p=-1$

$p=-\frac{2}{5}$

8) $2m^2-3m-20=0$

-40, 8, -5, -3

	$2m$	-5
m	$2m^2$	$-5m$
4	$8m$	-20

$(2m-5)(m+4)=0$

$2m-5=0 \quad m+4=0$

$2m=5 \quad m=-4$

$m=5/2$

9) $2v^2-9v+16=7$

$2v^2-9v+9=0$

18, -6, -3, -9

$2v$ | -3

	$2v$	-3
v	$2v^2$	$-3v$
-3	$-6v$	9

$(2v-3)(v-3)=0$

$2v-3=0 \quad v-3=0$

$v=3/2 \quad v=3$

10) $3n^2-19n-46=-6$

$3n^2-19n-40=0$

-120, -24, 5, -19

$3n$ | 5

	$3n$	5
n	$3n^2$	$5n$
-8	$-24n$	-40

$(3n+5)(n-8)=0$

$3n+5=0 \quad n-8=0$

$3n=-5 \quad n=8$

$n=-5/3$

Solve each equation by taking square roots.

11) $\sqrt{m^2}=\sqrt{63}$

$\sqrt{9}\ \sqrt{7}\ \sqrt{1}$

$m=\pm 3\sqrt{7}$

12) $a^2=25$

$a=\pm 5$

13) $n^2 = 13$

$n = \pm\sqrt{13}$

14) $\sqrt{r^2} = \sqrt{98}$

$\sqrt{49}\ \sqrt{2}$

$r = \pm 7\sqrt{2}$

15) $p^2 + 10 = 22$

$p^2 = 12$

$\sqrt{4}\ \sqrt{3}$

$p = \pm 2\sqrt{3}$

16) $-5x^2 = 90$

$x^2 = -18$

$\sqrt{9}\ \sqrt{2}\ \sqrt{-1}$

$x = \pm 3i\sqrt{2}$

17) $(n+7)^2 = 100$

$n+7 = \pm 10$

$n = -7 \pm 10$ $\quad n = \{-17, 3\}$

18) $(x-9)^2 = 24$

$\sqrt{4}\ \sqrt{6}$

$x - 9 = \pm 2\sqrt{6}$

$x = 9 \pm 2\sqrt{6}$

Solve each equation by completing the square.

19) $b^2 + 4b - 5 = 0$

$b^2 + 4b + \boxed{4} = 5 + \boxed{4}$

$(b+2)^2 = 9$ $\quad b = \{-5, 1\}$

$b + 2 = \pm 3$

$b = -2 \pm 3$

20) $r^2 - 6r + 5 = 0$

$r^2 - 6r + \boxed{9} = -5 + \boxed{9}$

$(r-3)^2 = 4$ $\quad r = \{1, 5\}$

$r - 3 = \pm 2$

$r = 3 \pm 2$

21) $x^2 + 12x + 20 = 0$

$x^2 + 12x + \boxed{36} = -20 + \boxed{36}$

$(x+6)^2 = 16$

$x + 6 = \pm 4$ $\quad x = \{-10, -2\}$

$x = -6 \pm 4$

22) $x^2 + 6x - 40 = 0$

$x^2 + 6x + \boxed{9} = 40 + \boxed{9}$

$(x+3)^2 = 49$

$x + 3 = \pm 7$

$x = -3 \pm 7$ $\quad x = \{-10, 4\}$

23) $n^2 - 20n - 21 = 0$

$n - 20n + \boxed{100} = 21 + \boxed{100}$

$(n-10)^2 = 121$

$n - 10 = \pm 11$ $\quad n = \{-1, 21\}$

$n = 10 \pm 11$

24) $x^2 + 8x + 12 = 0$

$x^2 + 8x + \boxed{16} = -12 + \boxed{16}$

$(x+4)^2 = 4$ $\quad x = \{0, 8\}$

$x + 4 = \pm 4$

25) $n^2 - 8n - 21 = 0$

$n^2 - 8n + \boxed{16} = 21 + \boxed{16}$

$(n-4)^2 = 37$

$n - 4 = \pm\sqrt{37}$

$n = 4 \pm \sqrt{37}$

26) $m^2 + 20m - 72 = 0$

$m^2 + 20m + \boxed{100} = 72 + \boxed{100}$

$(m+10)^2 = 172$

$m + 10 = \pm 2\sqrt{43}$

$m = -10 \pm 2\sqrt{43}$