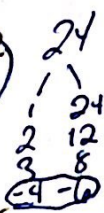


Name: \_\_\_\_\_ Date: \_\_\_\_\_

#81 All Factoring

Solve each equation by factoring on your own paper. (Remember, it must equal 0 before you can solve it)

7)  $n^2 - 10n + 22 = -2$   
 $n^2 - 10n + 24 = 0$   
 $(n-4)(n-6) = 0$   
 $n-4=0$   $n-6=0$   
 $n=4$   $n=6$



8)  $n^2 + 3n - 12 = 6$   
 $n^2 + 3n - 18 = 0$   $n+6=0$   $n-3=0$   
 $(n+6)(n-3) = 0$   $n = -6$   $n = 3$

10)  $7r^2 - 14r = -7$   
 $7r^2 - 14r + 7 = 0$   $r-1=0$   
 $7(r^2 - 2r + 1) = 0$   $r=1$   
 $7(r-1)(r-1) = 7(r-1)^2$

9)  $6n^2 - 18n - 18 = 6$   
 $6n^2 - 18n - 24 = 0$   $n-4=0$   $n+1=0$   
 $6(n^2 - 3n - 4) = 0$   $n=4$   $n=-1$   
 $6(n-4)(n+1) = 0$

12)  $5r^2 - 44r + 120 = -30 + 11r$   
 $5r^2 - 55r + 150 = 0$   $r-5=0$   $r-6=0$   
 $5(r^2 - 11r + 30) = 0$   $r=5$   $r=6$   
 $5(r-5)(r-6) = 0$

11)  $n^2 + 8n = -15$   
 $n^2 + 8n + 15 = 0$   $n+5=0$   $n+3=0$   
 $(n+5)(n+3) = 0$   $n = -5$   $n = -3$

14)  $b^2 + 5b - 35 = 3b$   
 $b^2 + 2b - 35 = 0$   $b+7=0$   $b-5=0$   
 $(b+7)(b-5) = 0$   $b = -7$   $b = 5$

13)  $-4k^2 - 8k - 3 = -3 - 5k^2$   
 $k^2 - 8k = 0$   $k=0$   $k-8=0$   
 $k(k-8) = 0$   $k = 8$

15)  $3r^2 - 16r - 7 = 5r - 12 = -36$   
 $3r^2 - 16r - 12 = 0$   $3r+2=0$   $r-6=0$   
 $3r^2 - 18r + 2r - 12 = 0$   $r = -\frac{2}{3}$   $r = 6$   
 $3r(r-6) + 2(r-6) = 0$   $r-6=0$   
 $(3r+2)(r-6) = 0$   $r = 6$

16)  $6b^2 - 13b + 3 = -3$   
 $6b^2 - 13b + 6 = 0$   
 $6b^2 - 4b - 9b + 6 = 0$   
 $2b(3b-2) - 3(3b-2) = 0$   
 $(2b-3)(3b-2) = 0$

17)  $7k^2 - 6k + 3 = 3$   
 $7k^2 - 6k = 0$   $k=0$   $7k-6=0$   
 $k(7k-6) = 0$   $k = \frac{6}{7}$

18)  $35k^2 - 22k + 7 = 4$   
 $35k^2 - 22k + 3 = 0$   
 $35k^2 - 15k - 7k + 3 = 0$   
 $5k(7k-3) - 1(7k-3) = 0$   
 $(5k-1)(7k-3) = 0$   
 $5k-1=0$   $k = \frac{1}{5}$   
 $7k-3=0$   $k = \frac{3}{7}$

19)  $7x^2 + 2x = 0$   
 $x(7x+2) = 0$   $x=0$   $7x+2=0$   
 $x = -\frac{2}{7}$

20)  $10b^2 = 27b - 18$   
 $10b^2 - 27b + 18 = 0$   $180$   
 $10b^2 - 15b - 12b + 18 = 0$   $12$   $15$   
 $5b(2b-3) - 6(2b-3) = 0$   
 $(5b-6)(2b-3) = 0$   
 $5b-6=0$   $2b-3=0$   
 $b = \frac{6}{5}$   $b = \frac{3}{2}$