

Algebra 2 Name KEY ID: 1

Assignment Date \_\_\_\_\_ Period \_\_\_\_\_

Solve each equation by factoring.

1)  $k^2 + 2k - 48 = 0$   $\frac{-2 \pm \sqrt{4 + 192}}{2}$   
 $(k+8)(k-6) = 0$   
 $k = -8, k = 6$

2)  $p^2 + 13p + 42 = 0$   $\frac{-13 \pm \sqrt{169 - 168}}{2}$   
 $(p+6)(p+7) = 0$   
 $p = -6, p = -7$

3)  $x^2 - 7x + 6 = 0$   $\frac{7 \pm \sqrt{49 - 24}}{2}$   
 $(x-6)(x-1) = 0$   
 $x = 6, 1$

4)  $n^2 - 4n + 4 = 0$   $\frac{4 \pm \sqrt{16 - 16}}{2}$   
 $(x-2)(x-2) = 0$   
 $x = 2, x = 2$

5)  $m^2 - 9m + 18 = 0$   $\frac{9 \pm \sqrt{81 - 72}}{2}$   
 $(m-6)(m-3) = 0$   
 $m = 6, m = 3$

6)  $21r^2 - 47r + 20 = 0$   $\frac{47 \pm \sqrt{2209 - 1680}}{42}$   
 $21r^2 - 35r + 12r + 20 = 0$   
 $7r(3r-5) + 4(3r-5) = 0$   
 $(7r+4)(3r-5) = 0$   
 $7r+4=0$   $3r-5=0$   $r = -\frac{4}{7}, r = \frac{5}{3}$

7)  $21x^2 - 38x - 48 = 0$   $\frac{38 \pm \sqrt{1444 + 8064}}{42}$   
 $x = \frac{3}{7}, -\frac{16}{7}$

8)  $n^2 - 8 = -2n$   $\frac{2 \pm \sqrt{4 + 32}}{2}$   
 $n^2 + 2n - 8 = 0$   
 $(n+4)(n-2) = 0$   
 $n = -4, n = 2$

9)  $b^2 + 8 = -6b$   $\frac{6 \pm \sqrt{36 - 48}}{2}$   
 $b^2 + 6b + 8 = 0$   
 $(b+2)(b+4) = 0$   
 $b = -2, b = -4$

10)  $v^2 = 35 - 2v$   $\frac{2 \pm \sqrt{4 + 140}}{2}$   
 $v^2 + 2v - 35 = 0$   
 $(v+7)(v-5) = 0$   
 $v = -7, v = 5$

Solve each equation by taking square roots.

11)  $6 + 81n^2 = 70$   $n = \pm \frac{8}{9}$   
 $81n^2 = 64$   
 $\sqrt{n^2} = \sqrt{\frac{64}{81}}$

12)  $3 - 8a^2 = -125$   
 $-8a^2 = -128$   
 $a^2 = 16$   
 $a = \pm 4$

13)  $64x^2 - 4 = 60$   
 $64x^2 = 64$   
 $x^2 = 1$   
 $x = \pm 1$

14)  $7 - 2k^2 = -65$   
 $-2k^2 = -72$   
 $k^2 = 36$   
 $k = \pm 6$

15)  $4p^2 + 2 = 66$   
 $4p^2 = 64$   
 $p^2 = 16$   
 $p = \pm 4$

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