

## Quadratic Equations w/ Square Roots

Solve each equation by taking square roots.

1)  $k^2 + 6 = 6$

2)  $25v^2 = 1$

3)  $n^2 + 4 = 40$

4)  $x^2 - 2 = 17$

5)  $9r^2 - 3 = -152$

6)  $9r^2 - 5 = 607$

7)  $-10 - 5n^2 = -330$

8)  $5a^2 + 7 = -60$

9)  $4b^2 + 2 = 326$

10)  $-8 - 8p^2 = -31$

11)  $5x^2 + 9 = 14$

12)  $2x^2 - 2 = 6$

13)  $8r^2 - 17 = 2471$

14)  $13p^2 - 3 = 4209$

15)  $7p^2 + 16 = 2151$

16)  $13 - 8n^2 = -1139$

## Quadratic Equations w/ Square Roots

Solve each equation by taking square roots.

1)  $k^2 + 6 = 6$

 $\{0\}$ 

$k^2 = 0$

2)  $25v^2 = 1$

 $\left\{\frac{1}{5}, -\frac{1}{5}\right\}$ 

$25v^2 - 1 = 0$   
 $(5v+1)(5v-1) = 0$   
 $v = -\frac{1}{5}, \frac{1}{5}$

3)  $n^2 + 4 = 40$

 $\{6, -6\}$ 

$n^2 - 36 = 0$

$(n+6)(n-6) = 0$

4)  $x^2 - 2 = 17$

 $\{\sqrt{19}, -\sqrt{19}\}$ 

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

5)  $9r^2 - 3 = -152$

 $\left\{\frac{i\sqrt{149}}{3}, -\frac{i\sqrt{149}}{3}\right\}$ 

$9r^2 + 149 = 0$

can not factor, no real solutions only imaginary

6)  $9r^2 - 5 = 607$

 $\{2\sqrt{17}, -2\sqrt{17}\}$ 

$9r^2 - 612 = 0$   
 $(3r - \sqrt{612})(3r + \sqrt{612}) = 0$   
 $r = \frac{\sqrt{612}}{3} = \frac{\sqrt{36} \sqrt{17}}{3} = 2\sqrt{17}$

7)  $-10 - 5n^2 = -330$

 $\{8, -8\}$ 

8)  $5a^2 + 7 = -60$

 $\left\{\frac{i\sqrt{335}}{5}, -\frac{i\sqrt{335}}{5}\right\}$ 

no real solutions

9)  $4b^2 + 2 = 326$

 $\{9, -9\}$ 

10)  $-8 - 8p^2 = -31$

 $\left\{\frac{\sqrt{46}}{4}, -\frac{\sqrt{46}}{4}\right\}$ 

11)  $5x^2 + 9 = 14$

 $\{1, -1\}$ 

12)  $2x^2 - 2 = 6$

 $\{2, -2\}$ 

13)  $8r^2 - 17 = 2471$

 $\{\sqrt{311}, -\sqrt{311}\}$ 

14)  $13p^2 - 3 = 4209$

 $\{18, -18\}$ 

15)  $7p^2 + 16 = 2151$

 $\{\sqrt{305}, -\sqrt{305}\}$ 

16)  $13 - 8n^2 = -1139$

 $\{12, -12\}$