Kuta Software - Infinite Algebra 2

Name Key

Date _____ Period ____

Quadratic Equations w/ Square Roots

Solve each equation by taking square roots.

1) $k^2 + 6 = 6$

$k^2 = 0$ $\boxed{k = \pm 0 \text{ or } 0}$

2) $25v^2 = 1$

$v^2 = \frac{1}{25}$ $\boxed{v = \pm\frac{1}{5}}$

3) $n^2 + 4 = 40$

$n^2 = 36$ $\boxed{n = \pm 6}$

4) $x^2 - 2 = 17$

$x^2 = 19$ $\boxed{x = \pm\sqrt{19}}$

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

$\frac{9r^2}{9} = \frac{-149}{9}$ $\boxed{\text{no Real solns}}$

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

$9r^2 = 612$

$r^2 = 68$

$r = \sqrt{68}$

$2 \wedge 34$

$\wedge 217$

$\boxed{r = \pm 2\sqrt{17}}$

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

$-5n^2 = -320$

$n^2 = 64$ $\boxed{n = \pm 8}$

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

$5a^2 = -67$

$a^2 = -$ $\boxed{\text{No Real sol'n}}$

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

$4b^2 = 324$

$b^2 = 81$ $\boxed{b = \pm 9}$

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

$-8p^2 = -23$

$p^2 = \frac{23}{8}$

$p = \frac{\sqrt{23}}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}} = \frac{\pm\sqrt{184}}{8}$ or $\frac{\pm 2\sqrt{46}}{8}$

$\boxed{\frac{\pm\sqrt{46}}{4}}$

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

$5x^2 = 5$

$x^2 = 1$ $\boxed{x = \pm 1}$

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

$2x^2 = 8$

$x^2 = 4$ $\boxed{x = \pm 2}$

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

$r^2 = 311$

$\boxed{r = \pm\sqrt{311}}$

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

$13p^2 = 4212$

$p^2 = 324$ $\boxed{p = \pm 18}$

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

$p^2 = 305$

$\boxed{p = \pm\sqrt{305}}$

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

$-8n^2 = -1152$

$n^2 = 144$

$\boxed{n = \pm 12}$

Name : Key Score : _____

Teacher : _____ Date : _____

Solve Quadratics by Taking the Square Root

Find the value of the variable. Round to the nearest hundredth if necessary.

1) $5r^2 - 9 = 111$

$5r^2 = 120$

$\sqrt{r^2} = \sqrt{24}$

$r = \pm 2\sqrt{6}$

2) $2w^2 + 2 = 98$

$2w^2 = 96$

$\sqrt{w^2} = \sqrt{48}$

$w = \pm 4\sqrt{3}$

3) $4h^2 + 9 = 45$

$4h^2 = 36$

$h^2 = 9$

$h = \pm 3$

4) $6r^2 + 5 = 53$

$6r^2 = 48$

$r^2 = 8$

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

5) $2d^2 + 10 = -152$

$2d^2 = -162$

no Real Sol'ns

6) $3w^2 + 8 = 98$

$3w^2 = 90$

$\sqrt{w^2} = \sqrt{30}$

$w = \pm\sqrt{30}$

7) $2y^2 + 2 = -78$

$2y^2 = -80$

no Real Solutions

8) $6n^2 + 4 = 184$

$6n^2 = 180$

$n^2 = 30$

$n = \pm\sqrt{30}$

9) $2y^2 - 6 = 14$

$2y^2 = 20$

$y^2 = 10$

$y = \pm\sqrt{10}$

10) $7r^2 - 10 = 74$

$7r^2 = 84$

$r^2 = 12$

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