

Name: Key
8A; Algebra I

Date: _____
Period _____

Homework

Solve algebraically for the variable (in simplest radical form)

$$1) a^2 - 36 = 0$$

$$\begin{array}{r} +36 \quad +36 \\ \hline \sqrt{a^2} = \sqrt{36} \\ \boxed{a = \pm 6} \end{array}$$

$$2) 2\left(\frac{1}{2}x^2\right) = 50(2)$$

$$\sqrt{x^2} = \sqrt{100}$$

$$\boxed{x = \pm 10}$$

$$3) \frac{3k^2}{3} = \frac{147}{3}$$

$$\sqrt{k^2} = \sqrt{49}$$

$$\boxed{k = \pm 7}$$

$$4) r^2 - 11 = 70$$

$$\begin{array}{r} +11 \quad +11 \\ \hline \sqrt{r^2} = \sqrt{81} \\ \boxed{r = \pm 9} \end{array}$$

$$5) 4x^2 + 5 = 21$$

$$\begin{array}{r} -5 \quad -5 \\ \hline 4x^2 = 16 \\ \frac{4x^2}{4} = \frac{16}{4} \\ \sqrt{x^2} = \sqrt{4} \\ \boxed{x = \pm 2} \end{array}$$

$$6) 2x^2 + 3x^2 = 45$$

$$\frac{5x^2}{5} = \frac{45}{5}$$

$$\sqrt{x^2} = \sqrt{9}$$

$$\boxed{x = \pm 3}$$

$$7) 4y^2 - 13 = y^2 + 14$$

$$\begin{array}{r} -y^2 \quad -y^2 \\ \hline 3y^2 - 13 = 14 \\ +13 \quad +13 \\ \hline 3y^2 = 27 \\ \frac{3y^2}{3} = \frac{27}{3} \\ \sqrt{y^2} = \sqrt{9} \\ \boxed{y = \pm 3} \end{array}$$

$$8) \frac{y^2}{3} = 12(3)$$

$$\sqrt{y^2} = \sqrt{36}$$

$$\boxed{y = \pm 6}$$

$$9) \frac{4x}{25} = \frac{4}{x} \quad x \neq 0$$

$$\frac{4x^2}{4} = \frac{100}{4}$$

$$\sqrt{x^2} = \sqrt{25}$$

$$\boxed{x = \pm 5}$$

$$10) \sqrt{x^2} = \sqrt{27}$$

$$\sqrt{9 \cdot 3}$$

$$\boxed{x = \pm 3\sqrt{3}}$$

$$11) \text{Solve for } x:$$

$$\sqrt{x^2} = \sqrt{25a^2}$$

$$\sqrt{25} \sqrt{a^2}$$

$$5 \cdot a$$

$$\boxed{x = \pm 5a}$$

$$12) \text{Solve for } x:$$

$$\frac{9x^2}{9} = \frac{r^2}{9}$$

$$\sqrt{x^2} = \frac{\sqrt{r^2}}{\sqrt{9}}$$

$$\boxed{x = \pm \frac{r}{3}}$$