

KEY

Solve each equation by taking square roots.

13) $x^2 = 90$

$$\sqrt{x^2} = \pm\sqrt{90}$$

$$\boxed{x = \pm 3\sqrt{10}}$$

15) $\frac{9v^2}{-9} = \frac{-45}{-9}$

$$v^2 = 5$$

$$\sqrt{v^2} = \pm\sqrt{5}$$

$$\boxed{v = \pm\sqrt{5}}$$

17) $\frac{3x^2 + 10}{-10} = \frac{118}{-10}$

$$3x^2 = 108$$

$$x^2 = 36$$

$$\sqrt{x^2} = \pm\sqrt{36}$$

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

19) $\frac{144k^2 + 7}{-7} = \frac{71}{-7}$

$$144k^2 = 64$$

$$k^2 = \frac{64}{144}$$

$$\sqrt{k^2} = \pm\sqrt{\frac{64}{144}} = \pm\frac{\sqrt{64}}{\sqrt{144}}$$

$$k = \pm\frac{8}{12} = \boxed{\pm\frac{2}{3}}$$

21) $\frac{8v^2 - 12}{+12} = \frac{308}{+12}$

$$8v^2 = 320$$

$$v^2 = 40$$

$$\sqrt{v^2} = \pm\sqrt{40}$$

$$\boxed{v = \pm 2\sqrt{10}}$$

23) $\frac{9x^2 + 3}{-3} = \frac{21}{-3}$

$$9x^2 = 18$$

$$x^2 = 2$$

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

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

25) $\frac{3x^2 - 6}{+6} = \frac{282}{+6}$

$$3x^2 = 288$$

$$x^2 = 96$$

$$\sqrt{x^2} = \pm\sqrt{96}$$

$$\boxed{x = \pm 4\sqrt{6}}$$

14) $k^2 = 121$

$$\sqrt{k^2} = \pm\sqrt{121}$$

$$\boxed{k = \pm 11}$$

16) $\frac{a^2 + 3}{-3} = \frac{51}{-3}$

$$a^2 = 48$$

$$\sqrt{a^2} = \pm\sqrt{48}$$

$$\boxed{a = \pm 4\sqrt{3}}$$

18) $\frac{49x^2 - 10}{+10} = \frac{26}{+10}$

$$\frac{49x^2}{49} = \frac{36}{49}$$

$$\sqrt{x^2} = \pm\sqrt{\frac{36}{49}} = \pm\frac{\sqrt{36}}{\sqrt{49}}$$

$$\boxed{x = \pm\frac{6}{7}}$$

20) $\frac{3p + 36p^2}{-3} = \frac{103}{-3}$

$$\frac{36p^2}{36} = \frac{100}{36}$$

$$p^2 = \frac{100}{36}$$

$$\sqrt{p^2} = \pm\sqrt{\frac{100}{36}} = \pm\frac{\sqrt{100}}{\sqrt{36}}$$

$$p = \pm\frac{10}{6} = \boxed{\pm\frac{5}{3}}$$

22) $\frac{49a^2 - 1}{+1} = \frac{80}{+1}$

$$49a^2 = 81$$

$$a^2 = \frac{81}{49}$$

$$\sqrt{a^2} = \pm\sqrt{\frac{81}{49}} = \pm\frac{\sqrt{81}}{\sqrt{49}}$$

$$\boxed{a = \pm\frac{9}{7}}$$

24) $\frac{10p^2 + 2}{-2} = \frac{12}{-2}$

$$10p^2 = 10$$

$$p^2 = 1$$

$$\sqrt{p^2} = \pm\sqrt{1}$$

$$\boxed{p = \pm 1}$$

26) $\frac{8a^2}{-8} = \frac{-792}{-8}$

$$-8a^2 = -800$$

$$a^2 = 100$$

$$\sqrt{a^2} = \pm\sqrt{100}$$

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