

ODDS

$$1. \quad 6x^2 = 14x$$

$$\quad \quad -14x \quad -14x$$

$$6x^2 - 14x = 0$$

$$2x(3x - 7) = 0$$

$$2x = 0$$

$$x = 0$$

$$3x - 7 = 0$$

$$\quad +7 \quad +7$$

$$\frac{3x}{3} = \frac{7}{3}$$

$$x = 7/3$$

$$3. \quad 2(x+4)^2 - 10 = 0$$

$$\quad \quad \quad +10 \quad +10$$

$$\frac{2(x+4)^2}{2} = \frac{10}{2}$$

$$\sqrt{(x+4)^2} = \sqrt{5}$$

$$x+4 = \sqrt{5}$$

$$\quad -4 \quad -4$$

$$x = \sqrt{5} - 4$$

$$x+4 = -\sqrt{5}$$

$$\quad -4 \quad -4$$

$$x = -\sqrt{5} - 4$$

$$5. \quad 4(x-1)^2 - 100 = 0$$

$$\quad \quad \quad +100 \quad +100$$

$$\frac{4(x-1)^2}{4} = \frac{100}{4}$$

$$\sqrt{(x-1)^2} = \sqrt{25}$$

$$x-1 = 5$$

$$\quad +1 \quad +1$$

$$x = 6$$

$$x-1 = -5$$

$$\quad +1 \quad +1$$

$$x = -4$$

$$7. \quad 2x^2 = 5x + 3$$

$$\quad \quad -5x \quad -3 \quad -5x \quad -3$$

$$2x^2 - 5x - 3 = 0$$

$$(2x+1)(x-3) = 0$$

$$2x+1 = 0$$

$$\quad -1 \quad -1$$

$$\frac{2x}{2} = \frac{-1}{2}$$

$$x = -1/2$$

$$x-3 = 0$$

$$\quad +3 \quad +3$$

$$x = 3$$

$$9. \quad \frac{1}{4}(x+3)^2 = 0$$

$$\quad \quad \quad +1 \quad +1$$

$$\frac{1}{4}(x+3)^2 = 1 \cdot \frac{4}{1}$$

$$\sqrt{(x+3)^2} = \sqrt{4}$$

$$x+3 = 2$$

$$\quad -3 \quad -3$$

$$x = -1$$

$$x+3 = -2$$

$$\quad -3 \quad -3$$

$$x = -5$$

$$11. \quad f(x) = 16x - 24$$

$$0 = 16x - 24$$

$$\quad +24 \quad +24$$

$$\frac{24}{16} = \frac{16x}{16}$$

$$x = 24/16 = 3/2$$

$$13. \quad \overset{0}{f(x)} = 4x^2 - 1$$

$$0 = 4x^2 - 1$$

$$\frac{1}{4} = \frac{4x^2}{4}$$

$$\sqrt{\frac{1}{4}} = \sqrt{x^2}$$

$$\begin{array}{cc} \cancel{X = \sqrt{1/4}} & \cancel{X = -\sqrt{1/4}} \\ \downarrow & \downarrow \\ X = 1/2 & X = -1/2 \end{array}$$

$$15. \quad \overset{0}{f(x)} = 5x(2x-1) + 3(2x-1)$$

$$0 = 10x^2 - 5x + 6x - 3$$

$$0 = 10x^2 + x - 3$$

$$0 = (5x+3)(2x-1)$$

$$\begin{array}{l} 5x+3=0 \\ X = -3/5 \end{array}$$

$$\begin{array}{l} 2x-1=0 \\ X = 1/2 \end{array}$$

$$17. \quad \overset{0}{f(x)} = 4\left(x - \frac{7}{2}\right)^2 - 1$$

+1

+1

$$\frac{1}{4} = \frac{4\left(x - \frac{7}{2}\right)^2}{4}$$

$$\sqrt{\frac{1}{4}} = \sqrt{\left(x - \frac{7}{2}\right)^2}$$

$$\frac{1}{2} = x - \frac{7}{2}$$

$$X = \frac{8}{2} = 4$$

$$-\frac{1}{2} = x - \frac{7}{2}$$

$$X = \frac{6}{2} = 3$$

**EVENES**

$$2. \quad x^2 - 16 = 0$$

$$x^2 = 16$$

$$x^2 = \pm\sqrt{16}$$

$$x = \pm 4$$

$$4. \quad x^2 + 8x + 15 = 0$$

$$(x+3)(x+5) = 0$$

$$x+3=0 \quad x+5=0$$

$$x=-3 \quad x=-5$$

$$x = -5 + -3$$

$$6. \quad 9x(x-7) - 4(x-7) = 0$$

$$(9x-4)(x-7) = 0$$

$$9x-4=0 \quad x-7=0$$

$$9x=4 \quad x=7$$

$$x=4/9$$

$$x = 4/9 + 7$$

$$8. \quad (x+6)^2 - 40 = 0$$

$$(x+6)^2 = 40$$

$$\sqrt{(x+6)^2} = \pm\sqrt{40}$$

$$x+6 = \pm\sqrt{40}$$

$$x = \pm\sqrt{40} - 6$$

$$x = \pm 2\sqrt{10} - 6$$

$$10. \quad f(x) = \frac{2}{3}x^2 - 12$$

$$0 = \frac{2}{3}x^2 - 12$$

$$12 = \frac{2}{3}x^2$$

$$\frac{3}{2} \cdot 12 = \frac{3}{2} \cdot \frac{2}{3}x^2$$

$$18 = x^2$$

$$\pm\sqrt{18} = \sqrt{x^2}$$

$$x = \pm\sqrt{18}$$

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

$$12. \quad f(x) = 10x^2 + 25x - 60$$

$$0 = 10x^2 + 25x - 60$$

$$0 = 5(2x^2 + 5x - 12)$$

$$0 = 5(2x-3)(x+4)$$

$$2x-3=0 \quad x+4=0$$

$$2x=3 \quad x=-4$$

$$x=3/2$$

$$x = -4 + 3/2$$



$$14. \cancel{f(x)}_0 = 16x^2 - 9$$

$$0 = 16x^2 - 9$$

$$0 = (4x+3)(4x-3)$$

$$4x+3=0$$

$$4x = -3$$

$$x = -3/4$$

$$4x-3=0$$

$$4x = 3$$

$$x = 3/4$$

$$x = \pm 3/4$$

$$1b. \cancel{f(x)}_0 = 21x - 3x^2$$

$$0 = 21x - 3x^2$$

$$0 = 3x(7-x)$$

$$3x=0$$

$$\cancel{3x=0}$$

$$x=0$$

$$7-x=0$$

$$7 = x$$

$$x=7$$

$$x = 0, 7$$

$$18. \cancel{f(x)}_0 = 5x^2 - 14x + 8$$

$$0 = 5x^2 - 14x + 8$$

$$0 = (5x-4)(x-2)$$

$$5x-4=0$$

$$5x = 4$$

$$x = 4/5$$

$$x-2=0$$

$$x = 2$$

$$x = 4/5, 2$$