

$$\#35 \quad x^2 + \frac{3}{4}x + \frac{9}{64} = \frac{1}{2} + \frac{9}{64}$$

$$\begin{aligned} \frac{3}{4} \div 2 &= \frac{3}{4} \cdot \frac{1}{2} \\ &= \frac{3}{8} \end{aligned} \quad \begin{aligned} \left(x + \frac{3}{8}\right)^2 &= \frac{1}{2} + \frac{9}{64} \\ &= \frac{32}{64} + \frac{9}{64} \\ &= \frac{41}{64} \end{aligned}$$

$$\left(\frac{3}{8}\right)^2 = \frac{9}{64}$$

$$x + \frac{3}{8} = \pm \frac{\sqrt{41}}{8}$$

$$\text{OK} \left(x = -\frac{3}{8} \pm \frac{\sqrt{41}}{8} \right)$$

$$\text{OK} \left(x = \frac{-3 \pm \sqrt{41}}{8} \right)$$

$$\#37 \quad \text{p. 259}$$

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

① divide by
3 to get
 $1x^2$

$$x^2 + \frac{1}{3}x = \frac{2}{9}$$

② add $\left(\frac{b}{2}\right)^2$
to both
sides

$$b = \frac{1}{3} \quad \frac{b}{2} = \frac{1}{6} \quad \left(\frac{b}{2}\right)^2 = \frac{1}{36}$$

$$x^2 + \frac{1}{3}x + \frac{1}{36} = \frac{2}{9} + \frac{1}{36}$$

completing
the
square

$$\left(x + \frac{1}{6}\right)^2 = \frac{8}{36} + \frac{1}{36} = \frac{9}{36}$$

$$\sqrt{\left(x + \frac{1}{6}\right)^2} = \pm \sqrt{\frac{1}{4}}$$

$$x + \frac{1}{6} = \pm \frac{1}{2}$$

$$-\frac{1}{6} \quad -\frac{1}{6}$$

$$x = -\frac{1}{6} \pm \frac{3}{6}$$

$$x = -\frac{2}{3}, \quad x = \frac{1}{3}$$

#33

we want:
 $1x^2$

$$\frac{3x^2 - 4x = 2}{3}$$

$$x^2 - \frac{4}{3}x + \frac{4}{9} = \frac{2}{3} + \frac{4}{9}$$

$$\left(x - \frac{2}{3}\right)^2 = \frac{6}{9} + \frac{4}{9}$$

$$\left(x - \frac{2}{3}\right)^2 = \frac{10}{9}$$

$$x - \frac{2}{3} = \pm \frac{\sqrt{10}}{3}$$

$$x = \frac{2}{3} \pm \frac{\sqrt{10}}{3}$$

$$x = \frac{2 \pm \sqrt{10}}{3}$$

$b = \frac{-4}{3}$
 $\frac{b}{2} = \frac{-4}{3} \cdot \frac{1}{2}$
 $= \frac{-4}{6} = \frac{-2}{3}$
 $\left(\frac{-2}{3}\right)^2 = \frac{4}{9}$

p.259 #44
solve by factoring

$$2x-1=0$$

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

$$x-1=0$$

$$x=1$$

$$2x^2 - 3x + 1 = 0$$

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

$$m, n : \quad m+n = -3$$

$$m \cdot n = 2$$

~~$$\begin{array}{r} -3 \\ -1 \quad -2 \\ 2 \end{array}$$~~

TABLE		prod
-3		
1	-4	-4
-1	-2	3

TABLE		sum
2		
-1	-2	-3

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

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

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

#45 $x^2 - 4 = -3x$

$$x^2 + 3x - 4 = 0$$

$$(x+4)(x-1) = 0$$

$$x+4=0 \quad x-1=0$$

$$x = -4 \quad x = 1$$

$$-\frac{1}{2} + \frac{\sqrt{3}}{2}$$

same as: $\frac{-1 + \sqrt{3}}{2}$

same as: $\frac{\sqrt{3} - 1}{2}$

#46 solve by factoring

$$ax^2 + bx + c = 0$$

$$16 + 22x = 3x^2$$

$$3x^2 - 22x - 16 = 0$$

$$(3x + 2)(x - 8) = 0$$

$$3x + 2 = 0$$

$$x - 8 = 0$$

$$x = -\frac{2}{3}$$

$$x = 8$$

$$3x^2 - 22x - 16 = 0$$

$$m+n = -22$$

$$m \cdot n = -48$$

$$m = -24$$

$$n = 2$$

$$3x^2 - 24x + 2x - 16 = 0$$

$$3x(x-8) + 2(x-8) = 0$$

$$(3x+2)(x-8) = 0$$