

$$17. x^2 - \frac{2}{3}x - 3 = 0$$


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

$$x^2 - \frac{2}{3}x + \left(-\frac{1}{3}\right)^2 = 3 + \left(-\frac{1}{3}\right)^2$$

$$3\frac{1}{9} = \frac{28}{9}$$


$$\left(x - \frac{1}{3}\right)^2 = 3 + \frac{1}{9}$$


$$\sqrt{\left(x - \frac{1}{3}\right)^2} = \sqrt{\frac{28}{9}}$$

$$x - \frac{1}{3} = \pm \sqrt{\frac{28}{9}}$$

$$+ \frac{1}{3} \quad + \frac{1}{3}$$

$$x = \frac{1}{3} \pm \sqrt{\frac{28}{9}}$$

$\frac{1}{3} + \sqrt{\frac{28}{9}}$   
 $\boxed{2.10}$   


$\frac{1}{3} - \sqrt{\frac{28}{9}}$   
 $\boxed{-1.43}$   


$$19. x^2 + x - 1 = 0$$

$$\begin{array}{r} +1 \quad +1 \\ \hline x^2 + x \end{array} = 1$$

$$\begin{array}{r} +(\frac{1}{2})^2 \quad +(\frac{1}{2})^2 \\ \hline \end{array}$$

$$(x + \frac{1}{2})^2 = \frac{5}{4} \quad \rightarrow 1 + \frac{1}{4} = \frac{5}{4}$$

$$x + \frac{1}{2} = \pm \sqrt{\frac{5}{4}}$$

$$\begin{array}{r} -\frac{1}{2} \quad -\frac{1}{2} \\ \hline x \end{array} = -\frac{1}{2} \pm \sqrt{\frac{5}{4}}$$

$$-\frac{1}{2} + \sqrt{\frac{5}{4}} \approx \boxed{0.62} \quad \text{😊}$$

$$-\frac{1}{2} - \sqrt{\frac{5}{4}} \approx \boxed{-1.62} \quad \text{😊}$$

21.  $4y^2 + 4y - 9 = 0$

$$\begin{array}{r} \phantom{4y^2 + 4y} + 9 \phantom{+ 9} \\ \hline \frac{4y^2 + 4y}{4} = \frac{9}{4} \end{array}$$

$$y^2 + 1y = \frac{9}{4}$$

$$\begin{array}{r} \phantom{(y + \frac{1}{2})^2} + (\frac{1}{2})^2 + (\frac{1}{2})^2 \\ \hline (y + \frac{1}{2})^2 = \frac{10}{4} \end{array} \rightarrow \frac{9}{4} + \frac{1}{4} = \frac{10}{4}$$

$$y + \frac{1}{2} = \pm \sqrt{\frac{10}{4}}$$

$$\begin{array}{r} -\frac{1}{2} \phantom{+ 1} \phantom{+ 1} \\ \hline y = -\frac{1}{2} \pm \sqrt{\frac{10}{4}} \end{array}$$

$$-\frac{1}{2} + \sqrt{\frac{10}{4}} \approx \boxed{1.08} \quad \text{😊}$$

$$-\frac{1}{2} - \sqrt{\frac{10}{4}} \approx \boxed{-2.08} \quad \text{😊}$$

*Homework:*

P. 552 #2-34 (Evens)