

9-18-17 1st Trig

$$a \cdot b = 0$$

Either $a=0$ OR $b=0$

$$(n+6)(n+2) = 0$$

One of them must be 0

$$\begin{array}{r} n+6=0 \\ \underline{-6 \quad -6} \\ n = -6 \end{array} \quad \text{OR} \quad \begin{array}{r} n+2=0 \\ \underline{-2 \quad -2} \\ n = -2 \end{array}$$

$$(n+1)(n+4)(n-10) = 0$$

$$\begin{array}{r} n+1=0 \\ \underline{-1 \quad -1} \\ n = -1 \end{array} \quad \text{OR} \quad \begin{array}{r} n+4=0 \\ \underline{-4 \quad -4} \\ n = -4 \end{array} \quad \text{OR} \quad \begin{array}{r} n-10=0 \\ \underline{+10 \quad +10} \\ n = 10 \end{array}$$

$$\textcircled{1} \quad n^2 + 8n + 12 = 0$$

$$(n+2)(n+6) = 0$$

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$$\begin{array}{r} n+2=0 \\ \underline{-2 \quad -2} \\ n = -2 \end{array} \quad \text{OR} \quad \begin{array}{r} n+6=0 \\ \underline{-6 \quad -6} \\ n = -6 \end{array}$$

$\frac{12}{1,12}$
 $2,6$
 $3,4$

$$\textcircled{2} \quad (3n+5)(2n-11)=0$$

$$\begin{array}{r} \downarrow \\ 3n+5=0 \\ \underline{-5 \quad -5} \\ 3n = -5 \\ \frac{3n}{3} = \frac{-5}{3} \end{array}$$

$$n = -1\frac{2}{3}$$

$$\begin{array}{r} \downarrow \\ 2n-11=0 \\ \underline{+11 \quad +11} \\ 2n = 11 \\ \frac{2n}{2} = \frac{11}{2} \end{array}$$

$$\text{OR} \quad n = 5\frac{1}{2}$$

$$\textcircled{3} \quad (2n+1)(5n+7)=0$$

$$\begin{array}{r} \downarrow \\ 2n+1=0 \\ \underline{-1 \quad -1} \\ 2n = -1 \\ \frac{2n}{2} = \frac{-1}{2} \end{array} \quad \text{OR} \quad \begin{array}{r} 5n+7=0 \\ \underline{-7 \quad -7} \\ 5n = -7 \\ \frac{5n}{5} = \frac{-7}{5} \end{array}$$

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

$$n = -1\frac{2}{5}$$

$$\textcircled{4} \quad n^2 - n - 20 = 0$$

$$(n+4)(n-5) = 0$$

$$\begin{array}{r} n+4=0 \\ \underline{-4 \quad -4} \\ n = -4 \end{array} \quad \text{OR} \quad \begin{array}{r} n-5=0 \\ \underline{+5 \quad +5} \\ n = 5 \end{array}$$

$$\begin{array}{r} 20 \\ 1, 20 \\ 2, 10 \\ +4, 5 \end{array}$$

$$\textcircled{5} \quad 30x^2 - \underline{x} - 3 = 0$$

$$\begin{array}{r} 30 \\ 1,30 \\ 2,15 \\ \cdot 3,10 \\ 5,6 \end{array}$$

$$\begin{array}{r} \sqrt{(3x-1)(10x+3)} \\ (3x \quad 3)(10x \quad 1) \end{array} \quad \begin{array}{r} 3 \\ 1,3 \\ 3,1 \end{array}$$

$$(3x-1)(10x+3) = 0$$

$$3x-1=0 \quad \text{OR} \quad 10x+3=0$$

$$\begin{array}{r} +1 \quad +1 \\ \hline 3x = 1 \\ \frac{3x}{3} = \frac{1}{3} \end{array}$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 10x = -3 \\ \frac{10x}{10} = \frac{-3}{10} \end{array}$$

$$x = \frac{1}{3} \quad \text{OR}$$

$$x = -\frac{3}{10}$$

$$\textcircled{6} \quad x^2 + 22x + 40 = 0$$

$$(x+20)(x+2) = 0$$

$$x+20=0 \quad \text{OR} \quad x+2=0$$

$$\begin{array}{r} -20 \quad -20 \\ \hline \end{array}$$

$$\begin{array}{r} -2 \quad -2 \\ \hline \end{array}$$

$$x = -20$$

OR

$$x = -2$$

9-18-17 3rd Try

$$a \cdot b = 0$$

One of them is a 0.

$$(n-6)(n+10) = 0$$

$$\begin{array}{r} \downarrow \\ n-6=0 \\ +6 \quad +6 \\ \hline n=6 \end{array}$$

OR

$$\begin{array}{r} \downarrow \\ n+10=0 \\ -10 \quad -10 \\ \hline n=-10 \end{array}$$

$$(n+1)(n+3)(n-4) = 0$$

$$\begin{array}{r} \downarrow \\ n+1=0 \\ -1 \quad -1 \\ \hline n=-1 \end{array}$$

$$\begin{array}{r} \downarrow \\ n+3=0 \\ -3 \quad -3 \\ \hline n=-3 \end{array}$$

$$\begin{array}{r} \downarrow \\ n-4=0 \\ +4 \quad +4 \\ \hline n=4 \end{array}$$

$$(2n-5)(3n+7)=0$$

$$\begin{array}{l} \downarrow \qquad \qquad \qquad \downarrow \\ 2n-5=0 \quad \text{OR} \quad 3n+7=0 \\ \underline{+5+5} \qquad \qquad \underline{-7-7} \\ 2n=5 \qquad \qquad 3n=-7 \\ \frac{2n}{2}=\frac{5}{2} \qquad \qquad \frac{3n}{3}=\frac{-7}{3} \\ n=2\frac{1}{2} \qquad \qquad n=-2\frac{1}{3} \end{array}$$

$$\textcircled{1} \quad n^2 + 13n + 12 = 0$$

$$(n+12)(n+1)=0$$

$$\begin{array}{l} \downarrow \qquad \qquad \qquad \downarrow \\ n+12=0 \quad \text{OR} \quad n+1=0 \\ \underline{-12-12} \qquad \qquad \underline{-1-1} \\ n=-12 \quad \text{OR} \quad n=-1 \end{array}$$

$$\begin{array}{l} 12 \\ 1, 12 \\ 2, 6 \\ 3, 4 \end{array}$$

$$\textcircled{2} \quad n^2 - 18n - 40 = 0$$

$$(n+2)(n-20)=0$$

$$\begin{array}{l} n+2=0 \qquad \qquad n-20=0 \\ \underline{-2-2} \qquad \qquad \underline{+20+20} \\ n=-2 \quad \text{OR} \quad n=20 \end{array}$$

$$\begin{array}{l} 40 \\ 1, 40 \\ \underline{+2, -20} \\ 4, 10 \\ 5, 8 \end{array}$$

9-18-17 4th Trig

$$a \cdot b = 0$$

Either a or b is 0.

$$(n-4)(n+7) = 0$$

$$\begin{array}{l} \checkmark \\ n-4=0 \quad \text{OR} \quad n+7=0 \\ \begin{array}{r} +4 \quad +4 \\ \hline n=4 \end{array} \quad \text{OR} \quad \begin{array}{r} -7 \quad -7 \\ \hline n=-7 \end{array} \end{array}$$

$$(n+1)(n-5)(n+6) = 0$$

$$\begin{array}{l} n+1=0 \quad n-5=0 \quad n+6=0 \\ \begin{array}{r} -1 \quad -1 \\ \hline n=-1 \end{array} \quad \text{OR} \quad \begin{array}{r} +5 \quad +5 \\ \hline n=5 \end{array} \quad \text{OR} \quad \begin{array}{r} -6 \quad -6 \\ \hline n=-6 \end{array} \end{array}$$

$$(3n-7)(2n+9) = 0$$

$$\begin{array}{l} \swarrow \quad \searrow \\ 3n-7=0 \quad \text{OR} \quad 2n+9=0 \\ \begin{array}{r} +7 \quad +7 \\ \hline 3n=7 \\ \frac{3n}{3} = \frac{7}{3} \\ n=2\frac{1}{3} \end{array} \quad \text{OR} \quad \begin{array}{r} -9 \quad -9 \\ \hline 2n=-9 \\ \frac{2n}{2} = \frac{-9}{2} \\ n=-4\frac{1}{2} \end{array} \end{array}$$

$$\textcircled{1} \quad n^2 + 8n + 12 = 0$$

$$(n+6)(n+2) = 0 \quad \begin{array}{l} 12 \\ 1, 12 \\ 2, 6 \\ 3, 4 \end{array}$$

$$\swarrow \quad \searrow$$

$$n+6=0 \quad \text{OR} \quad n+2=0 \quad \begin{array}{l} -2-2 \\ \hline n=-2 \end{array}$$

$$\frac{-6-6}{n=-6} \quad \text{OR} \quad n=-2$$

$$\textcircled{2} \quad n^2 - 18n - 40 = 0$$

$$(n+2)(n-20) = 0 \quad \begin{array}{l} 40 \\ 1, 40 \\ \textcircled{+2, -20} \\ 4, 10 \\ 5, 8 \end{array}$$

$$n+2=0 \quad \text{OR} \quad n-20=0$$

$$\frac{-2-2}{n=-2} \quad \text{OR} \quad \frac{+20+20}{n=20}$$

$$\textcircled{3} \quad 5n^2 + 11n + 2 = 0$$

$$\frac{5}{1, 5} \quad \begin{array}{l} \overbrace{(n+1)(5n+2)} \\ \overbrace{11n(n+2)(5n+1)} \end{array} \quad \begin{array}{l} 2 \\ 1, 2 \end{array}$$

$$(n+2)(5n+1) = 0$$

$$n+2=0 \quad \text{OR} \quad 5n+1=0$$

$$\frac{-2-2}{n=-2} \quad \text{OR} \quad \frac{-1-1}{5} \quad \frac{-1}{5}$$

$$\text{OR} \quad n = -\frac{1}{5}$$

$$\textcircled{4} \quad \underline{2}n^2 + 15n + \underline{7} = 0$$

$$\frac{2}{1,2} \quad 9n \overbrace{(n+7)(2n+7)} \quad \frac{7}{1,7}$$

$$15n \overbrace{(n+7)(2n+1)}$$

$$(n+7)(2n+1) = 0$$

$$\begin{array}{r} n+7=0 \\ -7 \quad -7 \\ \hline n = -7 \end{array} \quad \text{OR} \quad \begin{array}{r} 2n+1=0 \\ -1 \quad -1 \\ \hline 2n = -1 \\ \frac{2n}{2} = \frac{-1}{2} \\ n = -\frac{1}{2} \end{array}$$

$$\textcircled{5} \quad \underline{3}n^2 + 17n + 10 = 0$$

$$\begin{array}{l} \underline{3} \\ 1, 3 \end{array} \quad 13r(n+1)(3n+10) \quad \frac{10}{1, 10}$$

$$31r(n+10)(3n+1) \quad 2, 5$$

$$11r(n+2)(3n+5)$$

$$17r(n+5)(3n+2)$$

$$(n+5)(3n+2) = 0$$

$$\begin{array}{r} n+5=0 \quad \text{OR} \quad 3n+2=0 \\ -5 \quad -5 \\ \hline n = -5 \end{array}$$

$$\begin{array}{r} -2 \quad -2 \\ \hline 3n = -2 \\ \underline{3} \quad \underline{3} \end{array}$$

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