

9-5-17 1<sup>st</sup> Trig

Ex:  $(x+2)(x+10)$

$$x^2 + 10x + 2x + 20$$

$$x^2 + 12x + 20$$

Factoring  $\rightarrow$

$$(x+2)(x+10)$$

① Factor  $x^2 + 7x + 12$

$$(x+3)(x+4)$$

$$\begin{array}{r} 12 \\ \hline 1, 12 \end{array}$$

$$2, 6$$

$$3, 4$$

② Factor  $x^2 + 11x + 10$

$$(x+1)(x+10)$$

$$\begin{array}{r} 10 \\ \hline 1, 10 \\ 2, 5 \end{array}$$

③ Factor  $x^2 + 12x + 20$

$$(x+2)(x+10)$$

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

④ Factor  $x^2 + 4x - 12$

$(x-2)(x+6)$

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

⑤ Factor  $x^2 + 19x - 20$

$(x-1)(x+20)$

$\frac{20}{-1, 20}$   
 $2, 10$   
 $4, 5$

⑥ Factor  $x^2 - x - 30$

$(x+5)(x-6)$

$\frac{30}{1, 30}$   
 $2, 15$   
 $3, 10$   
 $+5, 6$

⑦ Factor  $x^2 - 7x + 10$

$(x-2)(x-5)$

$\frac{10}{-1, 10}$   
 $-2, 5$

⑧ Factor  $x^2 - 13x + 30$   
 $(x - 3)(x - 10)$

$$\begin{array}{l} \underline{30} \\ 1, 30 \\ 2, 15 \\ \textcircled{-3, -10} \\ 5, 6 \end{array}$$

⑨ Factor  $x^2 - 23x - 50$   
 $(x + 2)(x - 25)$

$$\begin{array}{l} \underline{50} \\ 1, 50 \\ \textcircled{+2, -25} \\ 5, 10 \end{array}$$

⑩

$$x^2 + 3x - 40$$

$$(x-5)(x+8)$$

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

⑪

$$x^2 - 11x - 80$$

$$(x+5)(x-16)$$

$$\begin{array}{r} 80 \\ \hline 1, 80 \\ 2, 40 \\ 4, 20 \\ \hline +5, -16 \\ 8, 10 \end{array}$$

Ex: Factor  $\underline{6}x^2 + 23x + 7$

$$\begin{array}{r} 6 \\ \hline 1, 6 \\ 2, 3 \end{array}$$

$$13x(x+1)(6x+7)$$

$$43x(x+7)(6x+1)$$

$$17x(2x+1)(3x+7)$$

$$23x(2x+7)(3x+1) \checkmark$$

$$\begin{array}{r} 7 \\ \hline 1, 7 \end{array}$$

9-5-17 3<sup>rd</sup> Trig

Ex:  $(n+4)(n+3)$   
 $n^2 + 3n + 4n + 12$

Factor  $n^2 + 7n + 12$   
 $(n+3)(n+4)$

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

① Factor  $n^2 + 21n + 20$   
 $(n+1)(n+20)$

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

② Factor  $n^2 + 8n + 12$   
 $(n+2)(n+6)$

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

③ Factor  $n^2 + 15n + 50$   
 $(n+5)(n+10)$

$$\begin{array}{r} 50 \\ \hline 1, 50 \\ 2, 25 \\ \hline 5, 10 \end{array}$$

④ Factor  $n^2 + 4n - 12$

$(n-2)(n+6)$

$$\begin{array}{r} 12 \\ \hline 1, 12 \\ \hline -2, 6 \\ 3, 4 \end{array}$$

Difference of 4.

⑤ Factor  $n^2 - 8n - 20$

$(n+2)(n-10)$   $\frac{20}{1, 20}$   
OR  
 $(n-10)(n+2)$   $\frac{20}{+2, -10}$   
4, 5

⑥ Factor  $n^2 - 6n - 40$

$(n+4)(n-10)$   $\frac{40}{1, 40}$   
2, 20  
 $\frac{40}{+4, -10}$   
5, 8

⑦ Factor  $n^2 - 21n + 20$

$(n-1)(n-20)$   $\frac{20}{1, 20}$   
2, 10  
4, 5

⑧ Factor  $n^2 - 7n + 6$

$(n-1)(n-6)$   $\frac{6}{1, 6}$   
2, 3

$$\textcircled{9} \quad n^2 - 7n - 30$$

$$(n+3)(n-10)$$

$$\frac{30}{}$$

$$1, 30$$

$$2, 15$$

$$\boxed{+3, -10}$$

$$5, 6$$

Tomorrow

$$\textcircled{10} \quad \text{Factor } \underline{6}x^2 + 23x + 7$$

$$\frac{7}{}$$

$$\frac{6}{}$$

$$1, 6$$

$$2, 3$$

$$13x(x+1)(6x+7)$$

$$43x(x+7)(6x+1)$$

$$17x(2x+1)(3x+7)$$

$$23x(2x+7)(3x+1) \checkmark$$

$$1, 7$$

9-5-17 4<sup>th</sup> Trig

Ex:  $(n+3)(n+5)$

$$n^2 + 5n + 3n + 15$$

$$n^2 + 8n + \underline{15}$$

Factoring:  $(n+3)(n+5)$

$$\begin{array}{r} 15 \\ \hline 1, 15 \\ \hline 3, 5 \end{array}$$

① Factor  $n^2 + \underline{8}n + 12$

$$(n+2)(n+6)$$

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

② Factor  $n^2 + 21n + 20$

$$(n+1)(n+20)$$

or

$$(n+20)(n+1)$$

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

③ Factor  $n^2 + 13n + 40$

$$(n+5)(n+8)$$

$$\begin{array}{r} 40 \\ \hline 1, 40 \\ \hline 2, 20 \\ \hline 4, 10 \\ \hline 5, 8 \end{array}$$

④ Factor  $n^2 + 4n - 12$

$(n-2)(n+6)$

$$\begin{array}{r} 12 \\ \hline 1, 12 \\ -2, 6 \\ 3, 4 \end{array}$$

Difference  
of 4

⑤ Factor  $n^2 - n - 20$

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

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

⑥ Factor  $n^2 - 18n - 40$

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

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

⑦ Factor  $n^2 - 7n + 10$

$(n-2)(n-5)$

$$\begin{array}{r} 10 \\ \hline 1, 10 \\ -2, 5 \end{array}$$

⑧ Factor  $n^2 - 8n - 12$

Not factorable

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

Tomorrow

Ex: Factor  $\underline{6}x^2 + \underline{23}x + \underline{7}$

$$\frac{6}{1,6}$$

$$13x(x+1)(6x+7)$$

$$\frac{7}{1,7}$$

$$2,3$$

$$43x(x+7)(6x+1)$$

$$17x(2x+1)(3x+7)$$

$$23x(2x+7)(3x+1) \checkmark$$