

9-7-17 1st Trig

① Factor $6x^2 + 9x - 105$

Pull out GCF, which is 3.

$$3(2x^2 + 3x - 35)$$

<u>2</u>	35x	(x	1)	(2x	35)	<u>35</u>
1, 2	1x	35)	(2x	1)		1, 35
	-7x	+5)	(2x	-7)		5, 7
		(x	7)	(2x	5)	

$$3(x+5)(2x-7)$$

② Factor $2x^2 - 5x - 12$

<u>2</u>		(x	1)	(2x	12)	<u>12</u>
1, 2	12, 2	(x	12)	(2x	1)	1, 12
	6x, 4x	(x	2)	(2x	6)	2, 6
	2, 12	(x	6)	(2x	2)	3, 4
	4, 6	(x	3)	(2x	4)	
	+3 -8	(x	4)	(2x	3)	

$$(x - 4)(2x + 3)$$

$$\textcircled{3} \quad 8x^2 + 75x + 27$$

$\frac{8}{1, 8}$ $\cdot 2, 4$	$35 (x + 1)(8x + 27)$ $217 (x + 27)(8x + 1)$ $33 (x + 3)(8x + 9)$ $75 (x + 9)(8x + 3) \checkmark$	$\frac{27}{1, 27}$ $3, 9$
----------------------------------	--	------------------------------

$$(2x + 1)(4x + 27)$$

$$(2x + 27)(4x + 1)$$

$$(2x + 3)(4x + 9)$$

$$(2x + 9)(4x + 3)$$

$$\textcircled{4} \quad \text{Factor } 20x^2 + 18x - 18$$

$$2(10x^2 + 9x - 9)$$

$\frac{10}{1, 10}$ $2, 5$	$10, 9$ $90, 1$ $30, 3$ $18, 5$ $45, 2$ $-6, 15$	$\frac{9}{1, 9}$ $3, 3$
------------------------------	---	----------------------------

$$(x + 1)(10x - 9)$$

$$(x - 9)(10x + 1)$$

$$(x + 3)(10x - 3)$$

$$(2x + 1)(5x - 9)$$

$$(2x - 9)(5x + 1)$$

$$(2x + 3)(5x - 3)$$

$$2(2x + 3)(5x - 3)$$

9-7-17 3rd Try

① Factor $6x^2 - 8x - 8$

$$\begin{array}{l} 2(3x^2 - 4x - 4) \\ \frac{3}{1,3} \quad 4,3(x \quad 1)(3x \quad 4) \quad \frac{4}{1,4} \\ \quad \quad 1,12(x \quad 4)(3x \quad 1) \quad \frac{2,2}{2,2} \\ -6,2(x \quad -2)(3x+2) \\ 2(x-2)(3x+2) \end{array}$$

② Factor $2x^2 - 9x + 10$

$$\begin{array}{l} \frac{2}{1,2} \quad -12x(x-1)(2x-10) \quad \frac{10}{1,10} \\ \quad \quad -21x(x-10)(2x-1) \quad \frac{2,5}{2,5} \\ -9x(x-2)(2x-5) \quad \checkmark \\ -12x(x-5)(2x-2) \end{array}$$

③ Factor $21x^2 - x - 2$

$$\begin{array}{l} \frac{21}{1,21} \quad 2,21(x \quad 1)(21x \quad 2) \quad \frac{2}{1,2} \\ \quad \quad 3,7 \quad 1,42(x \quad 2)(21x \quad 1) \\ +6,7(3x-1)(7x+2) \\ \quad \quad (3x \quad 2)(7x \quad 1) \end{array}$$

④ Factor $8x^2 + 75x + 27$

<u>8</u>	$35x(x + 1)(8x + 27)$	<u>27</u>
1,8	$217x(x + 27)(8x + 1)$	1,27
2,4	$33x(x + 3)(8x + 9)$	3,9
	$75x(x + 9)(8x + 3)$ ✓	
	$(2x + 1)(4x + 27)$	
	$(2x + 27)(4x + 1)$	
	$(2x + 3)(4x + 9)$	
	$(2x + 9)(4x + 3)$	

⑤ Factor $15x^2 + 31x + 14$

<u>15</u>	$29(x + 1)(15x + 14)$	<u>14</u>
1,15	$211(x + 14)(15x + 1)$	1,14
3,5	$37(x + 2)(15x + 7)$	2,7
	$107(x + 7)(15x + 2)$	
	$47(3x + 1)(5x + 14)$	
	$73(3x + 14)(5x + 1)$	
	$31(3x + 2)(5x + 7)$ ✓	
	$(3x + 7)(5x + 2)$	

9-7-17 4th Trig

① Factor $6x^2 - 8x - 8$

Take out GCF of 2

$$2(3x^2 - 4x - 4)$$

$$\begin{array}{l} \frac{3}{1,3} \quad 4,3(x \quad 1)(3x \quad 4) \quad \frac{4}{1,4} \\ \frac{3}{1,3} \quad 12,1(x \quad 4)(3x \quad 1) \quad \frac{4}{2,2} \\ -6,2(x \quad -2)(3x + 2) \end{array}$$

$$2(x-2)(3x+2)$$

② Factor $7x^2 + 43x + 6$

$$\begin{array}{l} \frac{2}{1,7} \quad 13x(x+1)(7x+6) \quad \frac{6}{1,6} \\ 43x(x+6)(7x+1) \quad \checkmark \quad \frac{6}{2,3} \\ (x+2)(7x+3) \\ (x+3)(7x+2) \end{array}$$

③ Factor $6x^2 + 9x - 105$

$$3(2x^2 + 3x - 35)$$

$$\begin{array}{l} \frac{2}{1,2} \quad 35,2(x \quad 1)(2x \quad 35) \quad \frac{35}{1,35} \\ \frac{2}{1,2} \quad 70,1(x \quad 35)(2x \quad 1) \quad \frac{35}{5,7} \\ +10,7(x+5)(2x-7) \\ (x \quad 7)(2x \quad 5) \end{array}$$

$$3(x+5)(2x-7)$$

④ Factor $10x^2 + 79x - 8$

$\frac{10}{1, 10}$	$10, 8$	$(x \quad 1)(10x \quad 8)$	$\frac{8}{1, 8}$
$2, 5$	$+8, -1$	$(x + 8)(10x - 1)$ ✓	$2, 4$
		$(x \quad 2)(10x \quad 4)$	
		$(x \quad 4)(10x \quad 2)$	
		$(2x \quad 1)(5x \quad 8)$	
		$(2x \quad 8)(5x \quad 1)$	
		$(2x \quad 2)(5x \quad 4)$	
		$(2x \quad 4)(5x \quad 2)$	

⑤ $2x^2 - 5x - 12$

$\frac{2}{1, 2}$	$12, 2$	$(x \quad 1)(2x \quad 12)$	$\frac{12}{1, 12}$
	$24, 1$	$(x \quad 12)(2x \quad 1)$	$2, 6$
	$6, 4$	$(x \quad 2)(2x \quad 6)$	$3, 4$
	$12, 2$	$(x \quad 6)(2x \quad 2)$	
	$6, 4$	$(x \quad 3)(2x \quad 4)$	
	$-8, 3$	$(x - 4)(2x + 3)$	
		$(x - 4)(2x + 3)$	