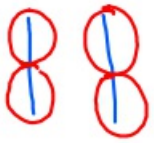
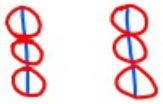
9-11-19 1st Try

$\frac{6}{2}$ ← have
← put in groups of

3

$\frac{2}{\frac{1}{2}}$  4

$\frac{2}{\frac{1}{3}}$  6

$\frac{2}{0}$ | | we can't put in groups of zero.

Undefined

① Simplify $\frac{(n+3)(n+4)}{n+4}$

$n+3$ $[n \neq -4]$

② Simplify $\frac{n^2+5n+4}{n+1}$

$\frac{(n+1)(n+4)}{n+1}$

$n+4$ $[n \neq -1]$

③ Simplify $\dfrac{n^2+7n+12}{n^2+6n+8}$

12: 1,12; 2,6; (3,4)

8: 1,8; (2,4)

$\dfrac{(n+3)(n+4)}{(n+2)(n+4)}$

$\dfrac{n+3}{n+2}$ $[n \neq -4]$

④ Simplify $\dfrac{n^2+12n+20}{n^2+7n+10}$

20: 1,20; (2,10); 4,5

10: 1,10; (2,5)

$n+2=0$
$-2 \quad -2$
$n=-2$

$\dfrac{(n+2)(n+10)}{(n+2)(n+5)}$

$\dfrac{n+10}{n+5}$ $[n \neq -2]$

⑤ Simplify $\dfrac{(3n-1)(2n+3)}{(4n+7)(2n+3)}$

$2n+3 \neq 0$
$-3 \quad -3$
$\frac{2n}{2} \neq \frac{-3}{2}$
$n \neq -1\frac{1}{2}$

$\dfrac{3n-1}{4n+7}$ $[n \neq -1\frac{1}{2}]$

⑥ Simplify $\dfrac{n^3+8}{n+2}$

$\dfrac{(n+2)(n^2-2n+4)}{n+2}$ (SOFAS)

$n+2 \neq 0$
$-2 \quad -2$
$n \neq -2$

n^2-2n+4 $[n \neq -2]$

Review

① Give all possibilities for

$6x^2 + \square x + 15$

6 | 15
1,6 → 1,15
2,3 → 3,5

91x (x + 1)(6x + 15)
91x (x + 15)(6x + 1)
23x (x + 3)(6x + 5)
33x (x + 5)(6x + 3)

53x (2x + 1)(3x + 15)
47x (2x + 15)(3x + 1)
14x (2x + 3)(3x + 5)
21x (2x + 5)(3x + 3)

② Factor $21x^2 - x - 2$

21 | 2
1,21 → 1,2
3,7

21 2 (x 1)(21x 2)
42 1 (x 2)(21x 1)
-7 +6 (3x -1)(7x + 2)
14 3 (3x 2)(7x 1)

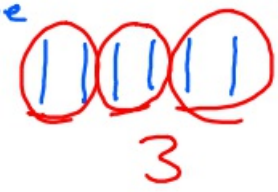
③ $12x^2 + 4x - 33$

12 | 33
1,12 → 1,33
2,6 → 3,11
3,4

33 12 (x 1)(12x 33)
(x 33)(12x 1)
36 11 (x 3)(12x 11)
132 3 (x 11)(12x 3)
6 66 (2x 1)(6x 33)
198 2 (2x 33)(6x 1)
-78 22 (2x - 3)(6x + 11) ✓
(2x 11)(6x 3)

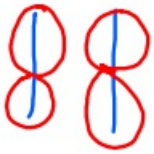
9-11-19 3rd Try

$\frac{6}{2}$ ← how many we have
← put in groups of



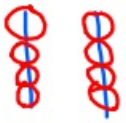
3

$\frac{2}{\frac{1}{2}}$



4

$\frac{2}{\frac{1}{4}}$



8

$\frac{2}{0}$

| |

we can't put things in groups of zero.

Undefined

① Simplify $\frac{(n+3)(n-2)}{(n+3)}$

$n+3 \neq 0$
$-3 \quad -3$
$n \neq -3$

$n-2 \quad [n \neq -3]$

② Simplify $\frac{n^2+7n+12}{n+4}$

$n+4 \neq 0$
$-4 \quad -4$
$n \neq -4$

$\frac{(n+3)(n+4)}{n+4}$

$n+3 \quad [n \neq -4]$

12
1, 12
2, 6
3, 4

(3) Simplify $\dfrac{n^2+11n+10}{n^2+5n+4}$

10: 1,10; 2,5

4: 1,4; 2,2

$\dfrac{(n+1)(n+10)}{(n+1)(n+4)}$

$n+1 \neq 0$

$-1 \quad -1$

$n \neq -1$

$\dfrac{n+10}{n+4}$ $[n \neq -1]$

(4) Simplify $\dfrac{n^2+9n+20}{n^2-16}$

20: 1,20; 2,10; 4,5

16: 1,16; 2,8; -4,-4

$\dfrac{(n+4)(n+5)}{(n-4)(n+4)}$

$n+4 \neq 0$

$-4 \quad -4$

$n \neq -4$

$\dfrac{n+5}{n-4}$ $[n \neq -4]$

(5) Simplify $\dfrac{(2n+1)(3n-5)}{(2n+1)(5n-1)}$

$2n+1 \neq 0$

$-1 \quad -1$

$\dfrac{2n}{2} \neq \dfrac{-1}{2}$

$\dfrac{3n-5}{5n-1}$ $\left[n \neq -\frac{1}{2}\right]$

⑥ Simplify $\dfrac{n^3+8}{n+2}$

S O E A S

$$\frac{(n+2)(n^2-2n+4)}{n+2}$$

$n^2-2n+4 \quad [n \neq -2]$

List out all possibilities for-

① $8x^2+\square x+35$

8: 1,8 ; 2,4 — 35: 1,35 ; 5,7

$43x \quad (x+1)(8x+35)$

$281x \quad (x+35)(8x+1)$

$47x \quad (x+5)(8x+7)$

$61x \quad (x+7)(8x+5)$

$74x \quad (2x+1)(4x+35)$

$142x \quad (2x+35)(4x+1)$

$34x \quad (2x+5)(4x+7)$

$38x \quad (2x+7)(4x+5)$

② $21x^2-1x-2$

21: 1,21 ; 3,7 — 2: 1,2

$21 \quad 2(x \;\; 1)(21x \;\; 2)$

$42 \quad 1(x \;\; 2)(21x \;\; 1)$

$-7 \quad +6 \quad (3x-1)(7x+2)$ ✓

$(3x \;\; 2)(7x \;\; 1)$

③ $10x^2 - x - 21$

10	21
1, 10	1, 21
2. 5	3, 7

$10 \cdot 21 \quad (x \quad 1)(10x \quad 21)$

$210 \quad 1 \quad (x \quad 21)(10x \quad 1)$

$30 \quad 7 \quad (x \quad 3)(10x \quad 7)$

$70 \quad 3 \quad (x \quad 7)(10x \quad 3)$

$42 \quad 5 \quad (2x \quad 1)(5x \quad 21)$

$105 \quad 2 \quad (2x \quad 21)(5x \quad 1)$

$-15 \quad +14 \quad (2x - 3)(5x + 7)$ ✓

$(2x \quad 7)(5x \quad 3)$

④ $5x^2 - 18x - 8$

5	8
1, 5	1, 8
	2, 4

$8, 5 \quad (x \quad 1)(5x \quad 8)$

$40, 1 \quad (x \quad 8)(5x \quad 1)$

$10, 4 \quad (x \quad 2)(5x \quad 4)$

$-20, +2 \quad (x \quad -4)(5x + 2)$ ✓