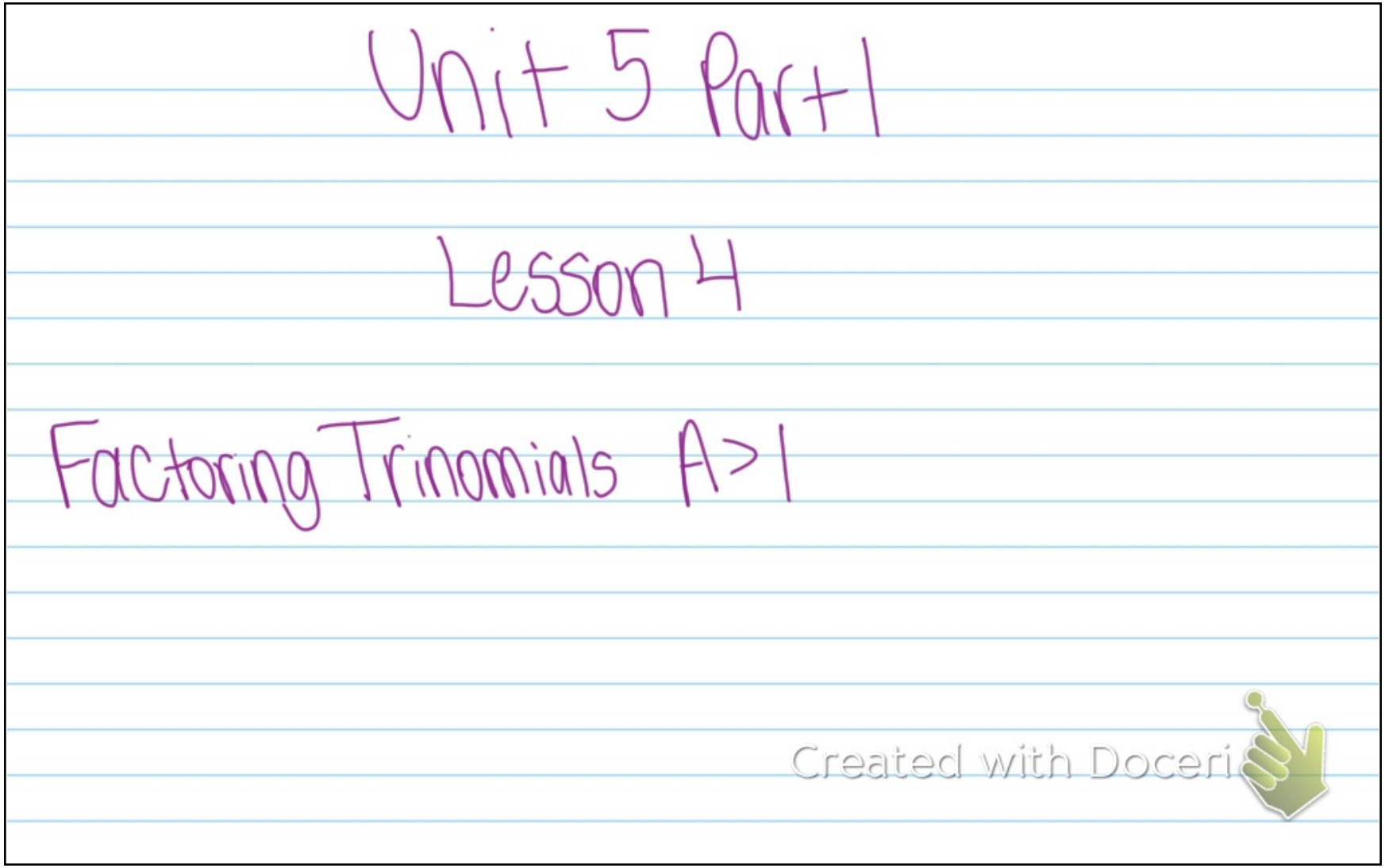
Unit 5 Part 1

Lesson 4

Factoring Trinomials $A>1$



1. $(2x+3)(x+4)$

$2x^2+8x+3x+12$

$2x^2+11x+12$

2. $(3x-1)(x-2)$

$3x^2-6x-1x+2$

$3x^2-7x+2$

3. $(4x+5)(2x-3)$

$8x^2-12x+10x-15$

$8x^2-2x-15$

4. $(5x-2)(3x+4)$

$15x^2+20x-6x-8$

$15x^2+14x-8$

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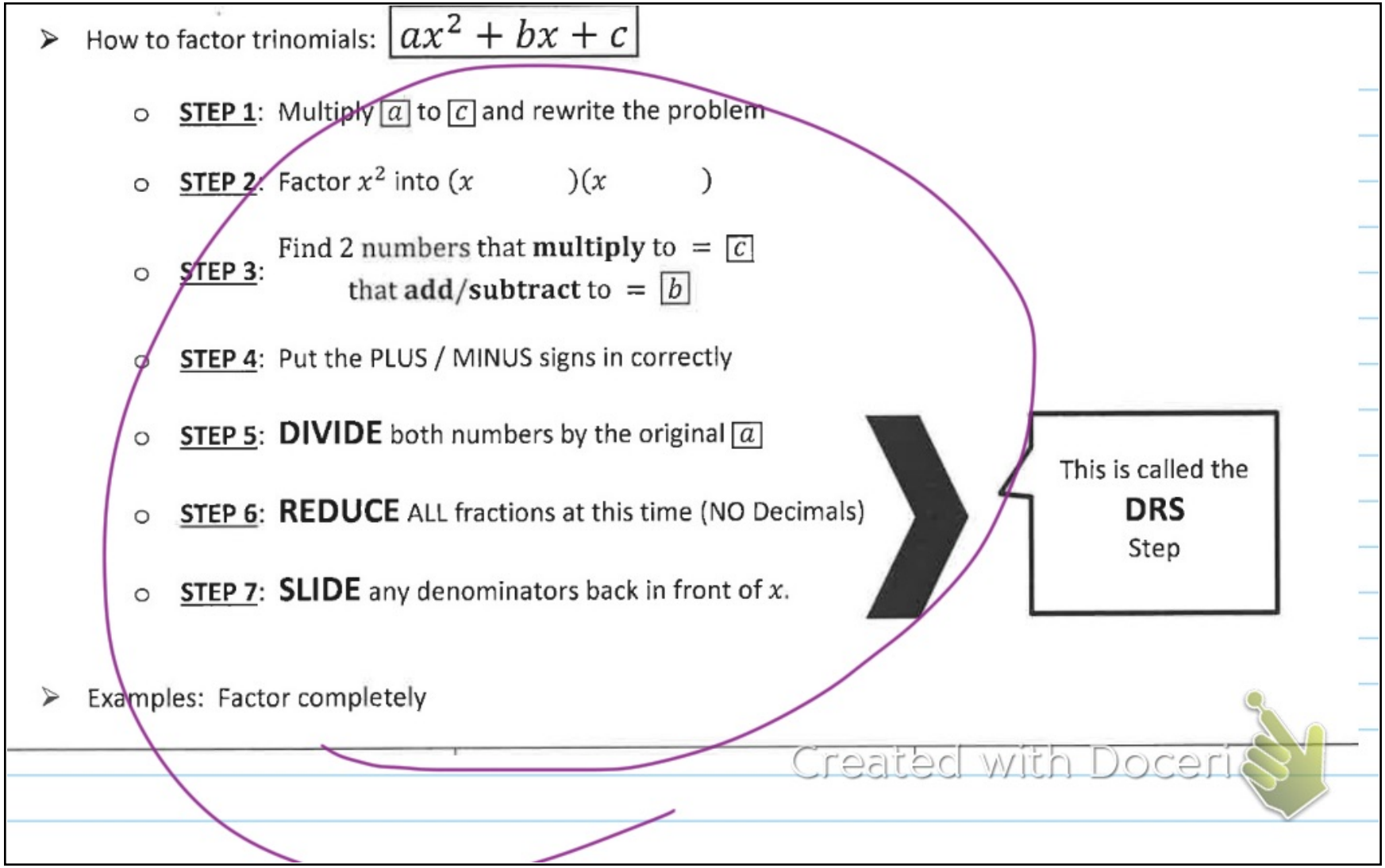
How to factor trinomials: $ax^2 + bx + c$
STEP 1: Multiply a to c and rewrite the problem
STEP 2: Factor x^2 into $(x \quad)(x \quad)$
STEP 3: Find 2 numbers that **multiply** to $= c$
that **add/subtract** to $= b$
STEP 4: Put the PLUS / MINUS signs in correctly
STEP 5: **DIVIDE** both numbers by the original a
STEP 6: **REDUCE** ALL fractions at this time (NO Decimals)
STEP 7: **SLIDE** any denominators back in front of x.
This is called the
DRS
Step
Examples: Factor completely
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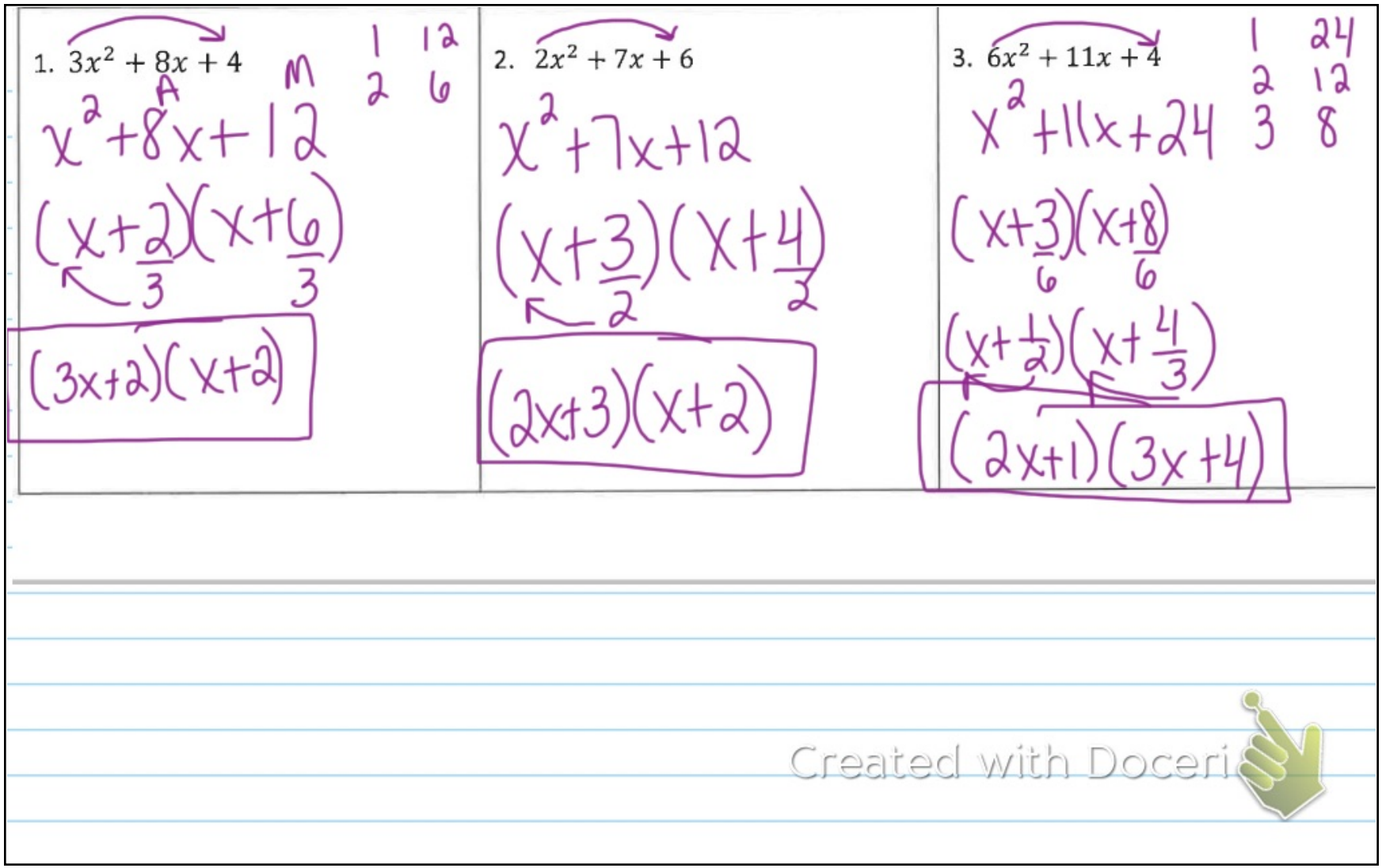
1. $3x^2 + 8x + 4$
A
M
$x^2+8x+12$
$(x+\frac{2}{3})(x+\frac{6}{3})$
$(3x+2)(x+2)$
1 12
2 6
2. $2x^2 + 7x + 6$
$x^2+7x+12$
$(x+\frac{3}{2})(x+\frac{4}{2})$
$(2x+3)(x+2)$
3. $6x^2 + 11x + 4$
$x^2+11x+24$
$(x+\frac{3}{6})(x+\frac{8}{6})$
$(x+\frac{1}{2})(x+\frac{4}{3})$
$(2x+1)(3x+4)$
1 24
2 12
3 8
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4. $3x^2 + 5x + 2$

x^2+5x+6

$(x+\frac{2}{3})(x+\frac{3}{3})$

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

5. $5x^2 - 17x + 14$

$x^2-17x+70$

$(x-\frac{7}{5})(x-\frac{10}{5})$

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

$5x^2-10x-7x+14$

$5x^2-17x+14$

1 70
2 35
5 14
7 10

6. $2x^2 - 9x + 4$

x^2-9x+8

1 8

$(x-\frac{8}{2})(x-\frac{1}{2})$

$(x-4)(2x-1)$

7. $2x^2 + 5x - 12$

8. $8x^2 + 18x - 5$

9. $6x^2 - 17x - 14$

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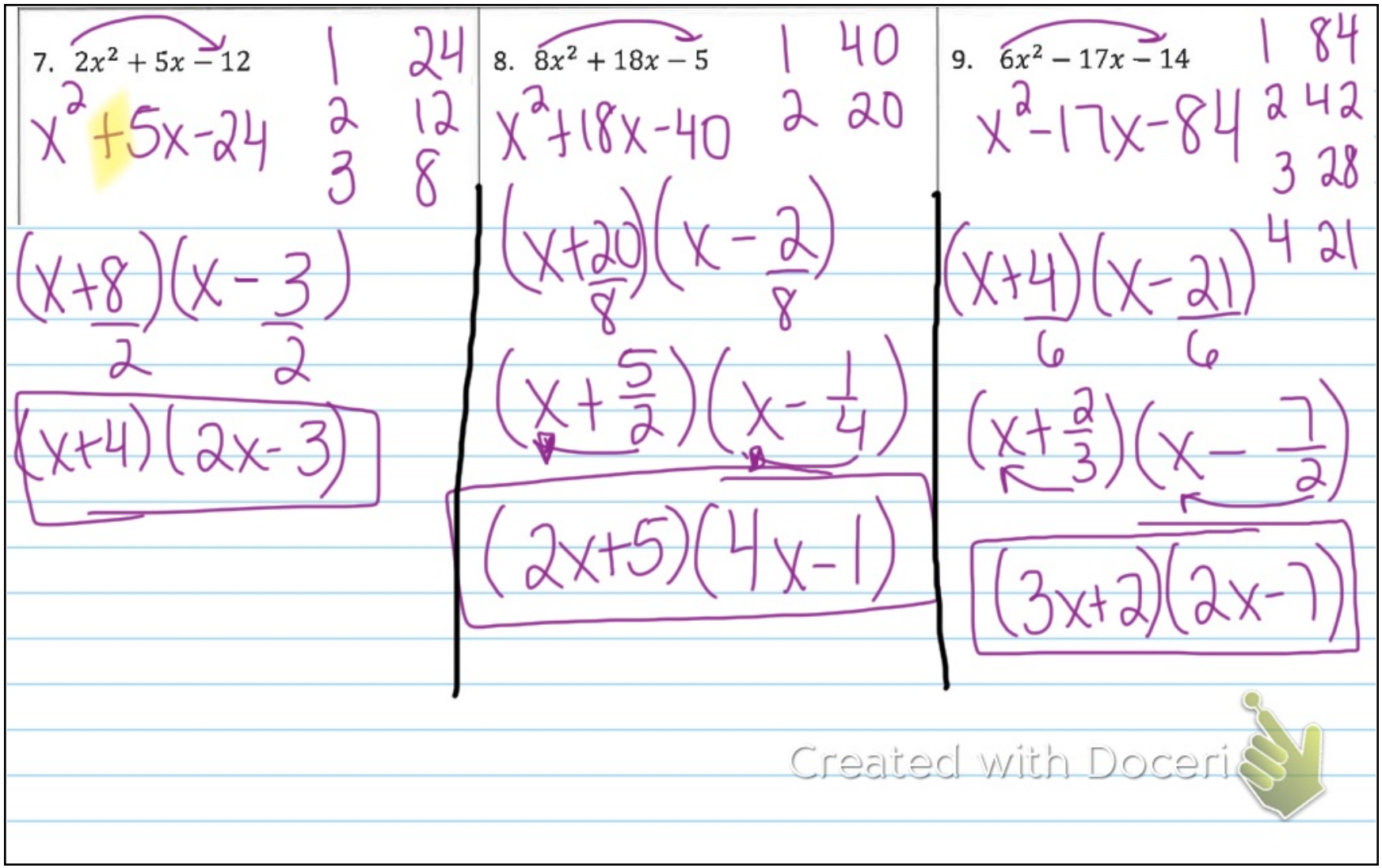
7. $2x^2 + 5x - 12$
$x^2 + 5x - 24$
1 24
2 12
3 8
$(x+\frac{8}{2})(x-\frac{3}{2})$
$(x+4)(2x-3)$
8. $8x^2 + 18x - 5$
$x^2 + 18x - 40$
1 40
2 20
$(x+\frac{20}{8})(x-\frac{2}{8})$
$(x+\frac{5}{2})(x-\frac{1}{4})$
$(2x+5)(4x-1)$
9. $6x^2 - 17x - 14$
$x^2 - 17x - 84$
1 84
2 42
3 28
4 21
$(x+\frac{4}{6})(x-\frac{21}{6})$
$(x+\frac{2}{3})(x-\frac{7}{2})$
$(3x+2)(2x-7)$
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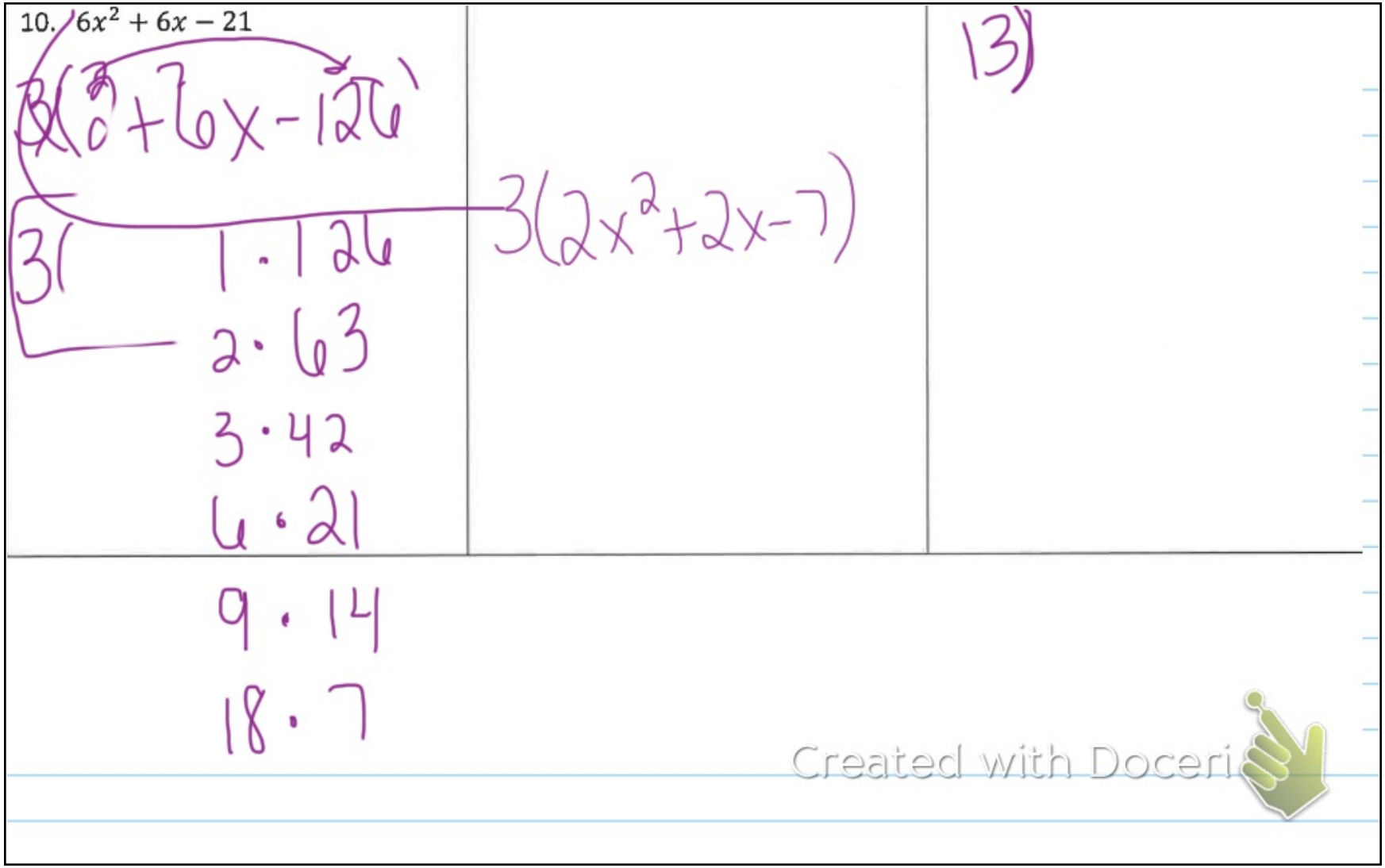
10. $6x^2 + 6x - 21$
$3(2x^2+6x-12)$
$3(2x^2+2x-7)$
13)
3(
1 · 126
2 · 63
3 · 42
6 · 21
9 · 14
18 · 7
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Factor.

1. $10m^2 - 7m + 1$

2. $4c^2 - 24c + 11$

5. $8x^2 + x - 7$

6. $5w^2 + w - 4$

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3. $10p^2 - 27p + 5$

4. $3w^2 - 10w + 8$

7. $7d^2 + 36d + 5$

8. $10y^2 + 11y - 6$

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9. $6d^2 - 7d - 10$

10. $5m^2 + 6m + 1$

11. $3x^2 - 10x + 7$

14. $5y^2 - 4y - 1$

15. $5a^2 + 12a + 4$

16. $28k^2 - k - 2$

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12. $15y^2 - y - 2$

$y^2 - y - 30$

$(y - \frac{6}{15})(y + \frac{5}{15})$

$(y - \frac{2}{5})(y + \frac{1}{3})$

$(5y - 2)(3y + 1)$

13. $10c^2 - 65c + 105$

$5(2c^2 - 13c + 21)$

$5(c^2 - 13c + 42)$

$5(c - 6)(c - 7)$

1 42
2 21
3 14
6 7

17. $12x^2 + 4x - 1$

18. $7y^2 - 9y + 2$

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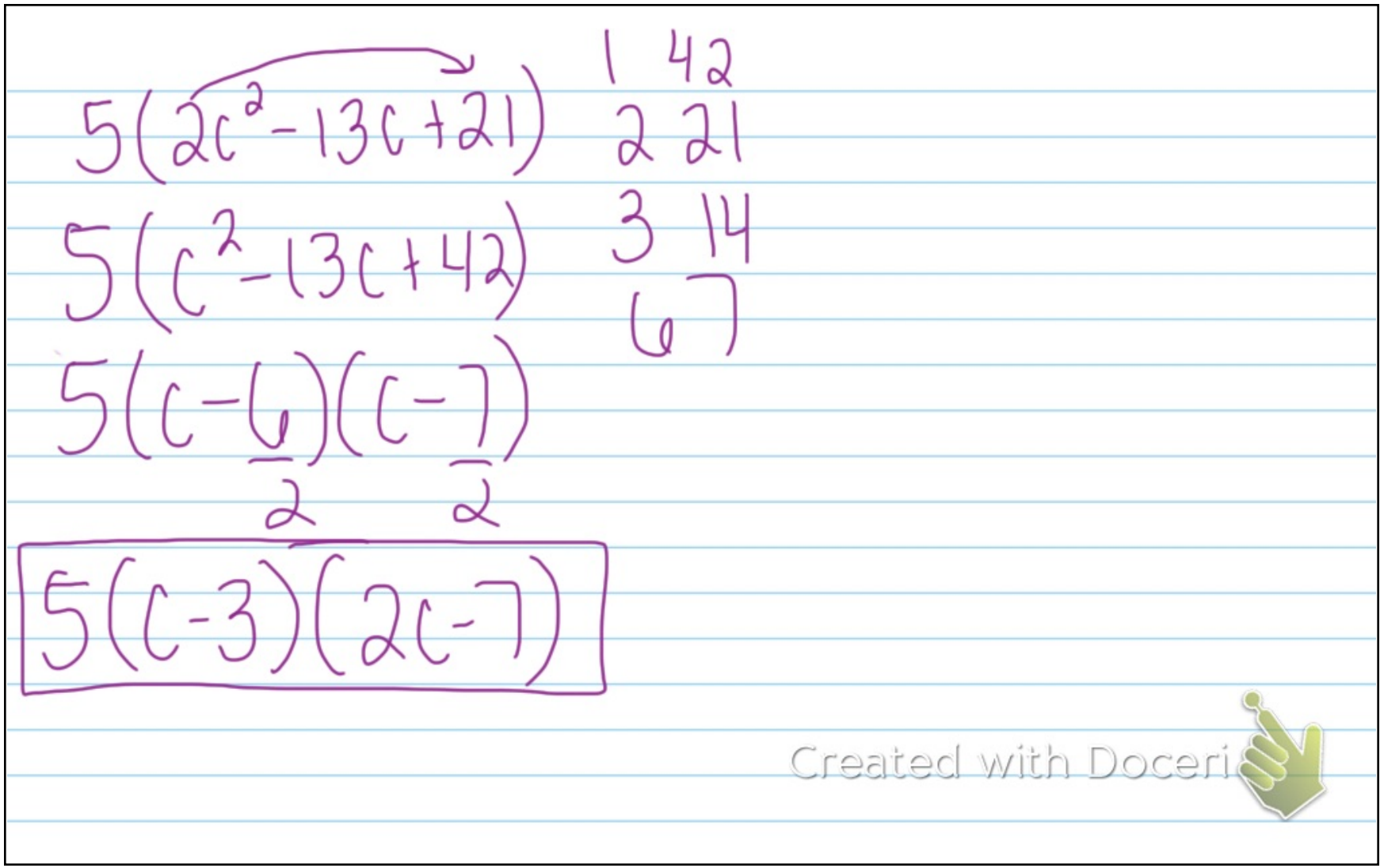
5(2c² - 13c + 21)
1 42
2 21
3 14
6 7
5(c² - 13c + 42)
5(c - 6)(c - 7)
2 2
5(c - 3)(2c - 7)
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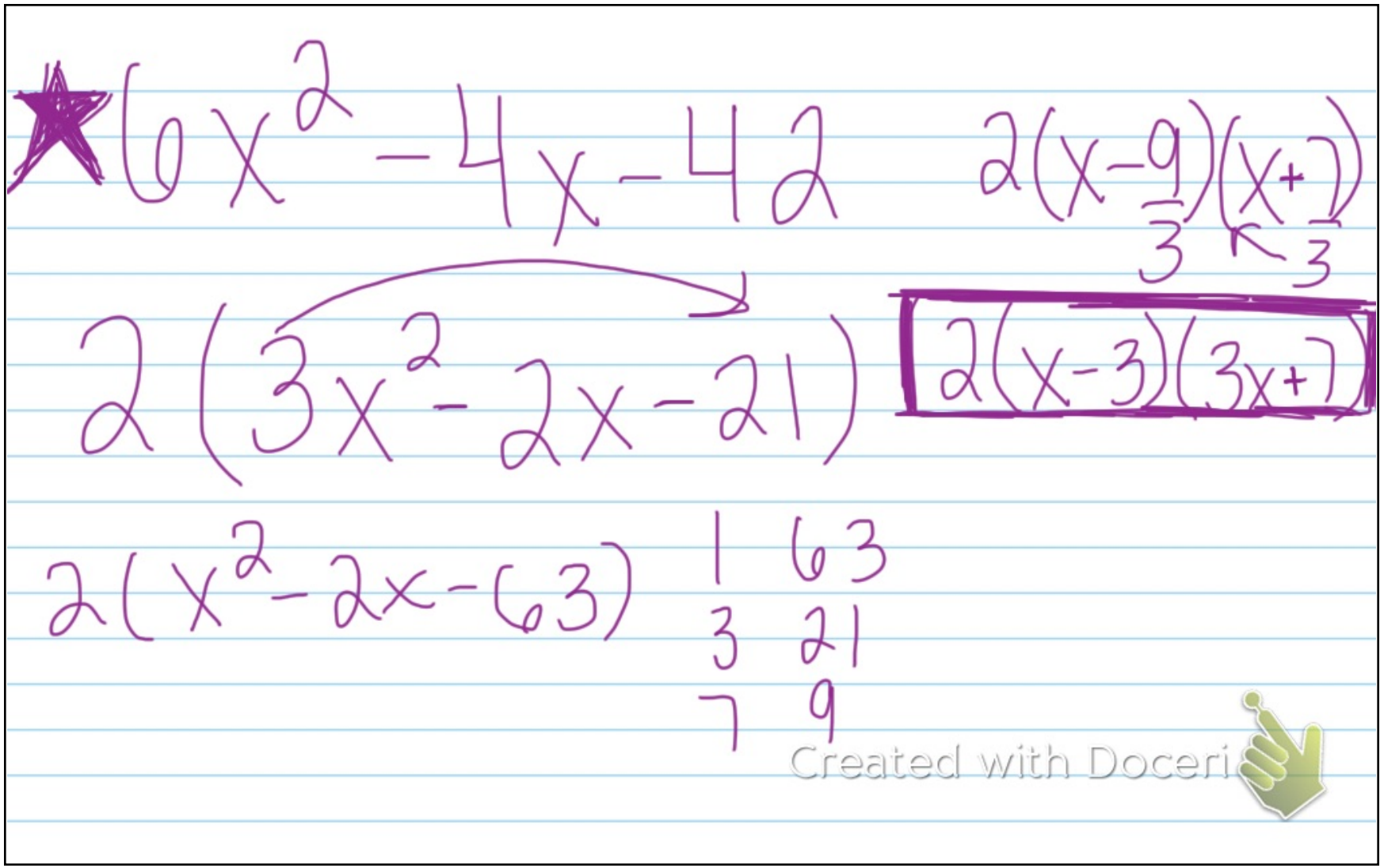
★ $6x^2 - 4x - 42$
$2(3x^2 - 2x - 21)$
$2(x^2 - 2x - 63)$
1 63
3 21
7 9
$2(x - \frac{9}{3})(x + \frac{7}{3})$
$2(x-3)(3x+7)$
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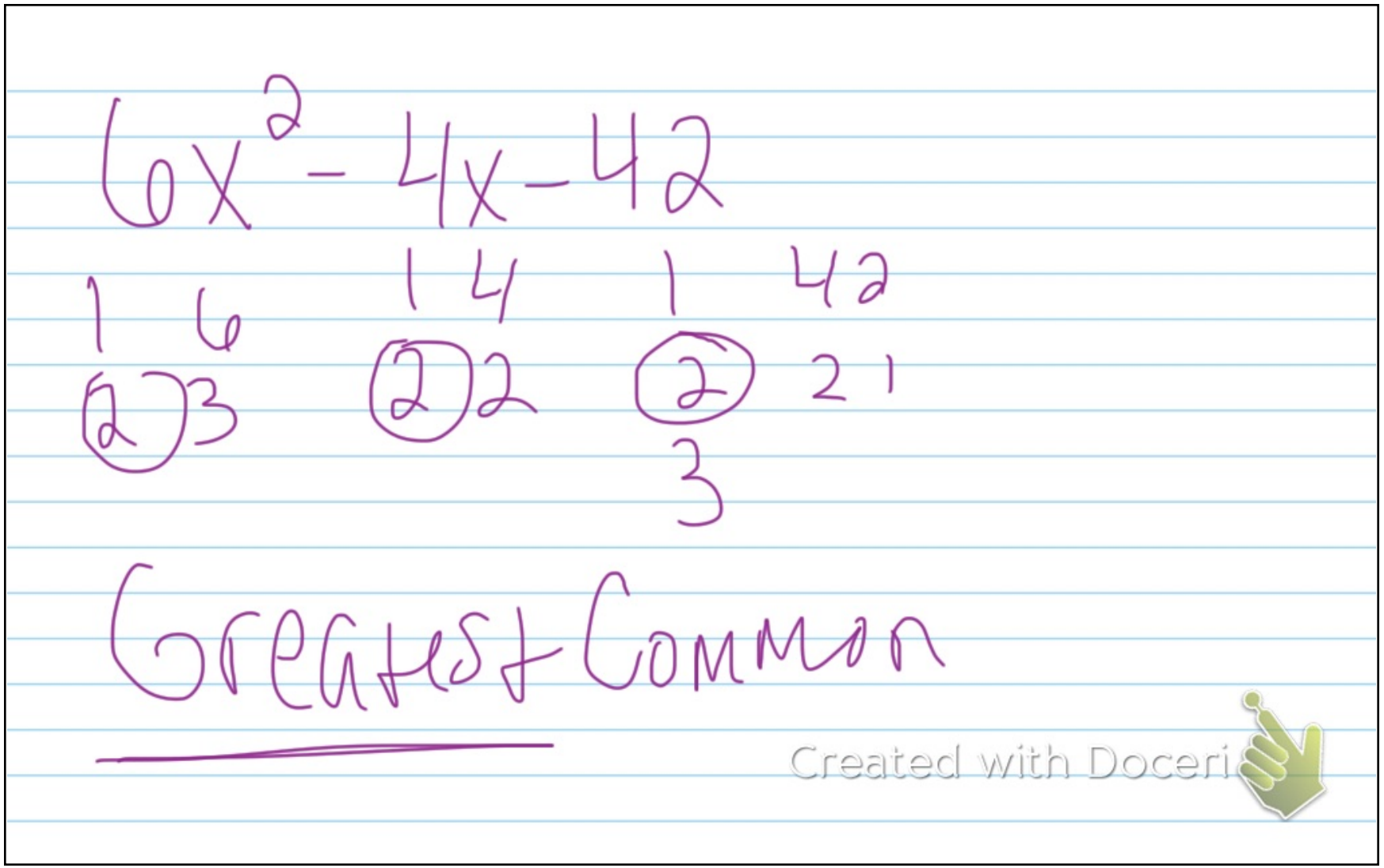
$6x^2 - 4x - 42$
1 6
2 3
1 4
2 2
1
2
3
4 2
2 1
Greatest Common
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Practice 15 and 16

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