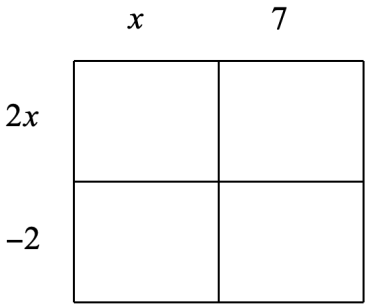
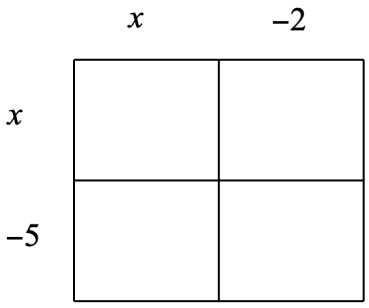
Getting Rid of Brackets

Section A



Identity:



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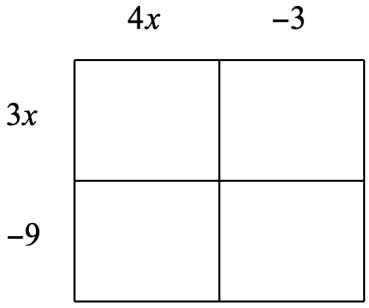
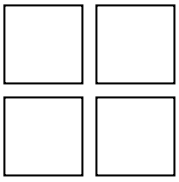


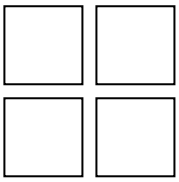
Identity:

Section B

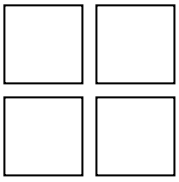
1. Expand and simplify $(x+1)(x+3)$ using the area model below:



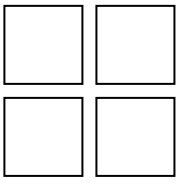
2. Expand and simplify $(x+5)(x-3)$ using the area model below:



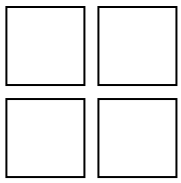
3. Expand and simplify $(x-7)(2x+4)$ using the area model below:



4. Expand and simplify $(x-2)(x-5)$ using the area model below:



5. Expand and simplify $(2x-4)(x+3)$ using the area model below:



Section B Use the area model to expand the brackets in each of these expressions.

1. $(x+1)(x+4)$
2. $(x+3)(x+5)$
3. $(x+2)(x-1)$
4. $(x-3)(x+1)$
5. $(x-2)(x-6)$
6. $(x+3)(x-3)$
7. $(2x+1)(x-3)$
8. $(x-3)(3x+2)$
9. $(2x+3)(2x-1)$
10. $(4x-5)(x+2)$
11. $(2x+1)(7x+1)$
12. $(5x-3)(3x-2)$

Section C Ask me if you want to move onto these before you finish section B.

13. $2xy(4x^2-3y)$
14. $(3x+2)^2$
15. $(3x-7y)(x-3y)$
16. $(5x-6y)^2$
17. $(x+1)(x+y+3)$
18. $(5x-6y+11)(5x-6)$
19. $(x+y+z)(x-y-z)$
20. $(2x+3y-7z)(4x-2y+11z)$
21. $(x+y+5)^2$
22. $(x+2)(x-2)$
23. $(x^2-4)(x+3)$

Section D Three sets of brackets.

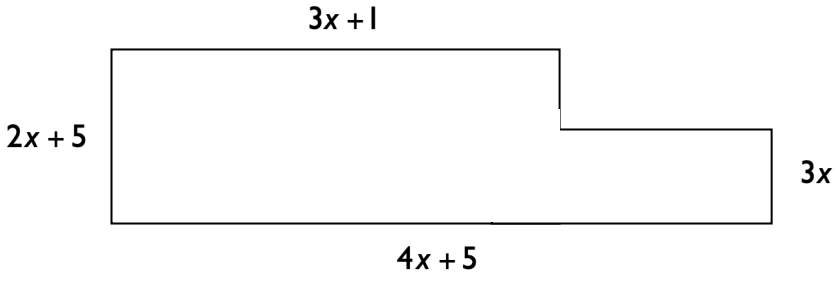
24. $(x+2)(x-2)(x+3)$
25. $(2x-3)(3x+1)(4x-5)$
26. $(2x+1)^3$
27. $(3x-1)^2(x+7)$
28. $(x+y)(x+2y)(x+3y)$
29. $(3x-4y)^3$
30. $(x+y+z)^3$

Section E

31. A farmer owns a huge field which is 5miles wide and 7 miles long. Managing to acquire extra land, he extends his field by x miles of width and 2x miles of length. By what area has his field increased?

32. Another option was for the farmer to increase his field by $3x^2+22x$ in area. In this case, find the dimensions of his new field.

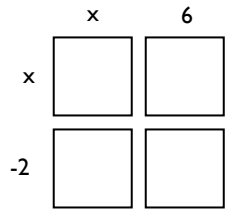
33. Find the area of Farmer Giles' Field:



Section F

Complete the following area models:

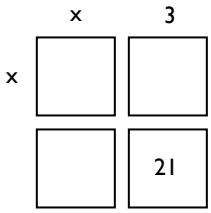
a)



This tells you that

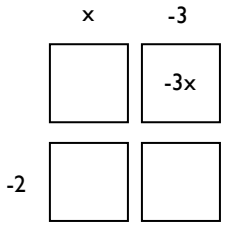
$x^2 + 4x - 12 \equiv (x+6)(x-2)$

b)



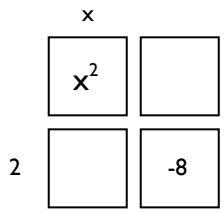
What does this tell you?

c)



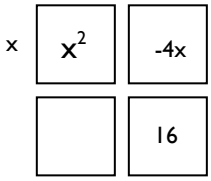
What does this tell you?

d)



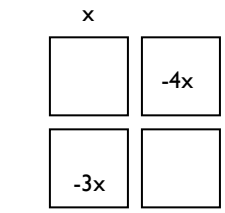
What does this tell you?

e)



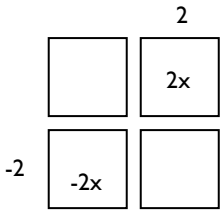
What does this tell you?

f)



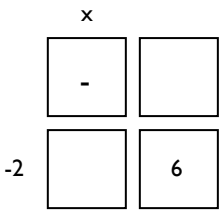
What does this tell you?

g)



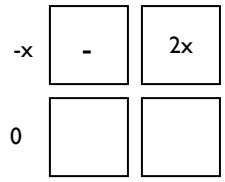
What does this tell you?

h)



What does this tell you?

i)



What does this tell you?

Getting Rid of Brackets - Homework

Use the area model to expand the brackets

1. $(2x-7)(x+9)$
2. $(4x-5)(2x+3)$
3. $(2x-11)(x-6)$

4. $(x+2)(x-2)$
5. $(x-8)(x+8)$
6. $(x-5)(x+5)$
7. Notice anything about the last three answers?

8. $(3x-7)(3x+7)$
9. $(5+2x)(5-2x)$
10. $(3-5x)(3+5x)$
11. $\left(4x-1\right)\left(1+4x\right)$

Do the previous four answers fit the same pattern?

12. $(x+2)(x-y-5)$
13. $(x-2y+7)(y-3)$
14. $(x-3y+7)(x+3y-7)$
15. $*(3x+5y-z)(x+2y+3z)$
16. $*(x+3)^3$

Find the missing information

17. $*4s(\ldots.+3k)=8s^2+\ldots..$
18. $*\ldots.(\ldots.+\ldots.+8w)=2k^2+6kt+\ldots.$
19. $*(x+\ldots.)(x+\ldots.)=x^2+5x+6$