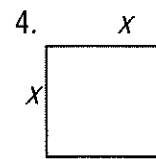
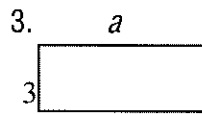
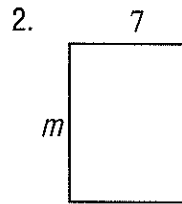
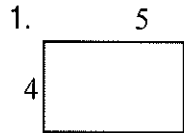


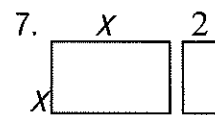
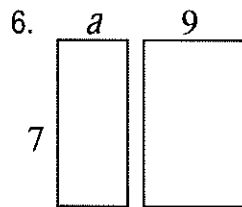
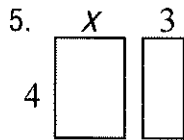
Distributive Property Using Area

NAME _____

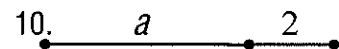
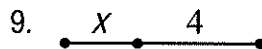
Write the expression that represents the area of each rectangle.



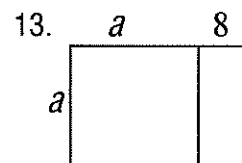
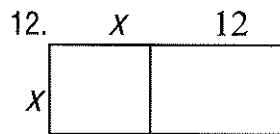
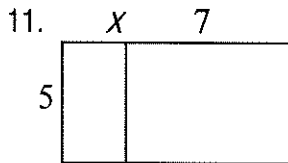
Find the area of each box in the pair.



Write the expression that represents the total length of each segment.



Write the area of each rectangle as the product of *length* \times *width* and also as a sum of the areas of each box.



AREA AS PRODUCT	AREA AS SUM
$5(x+7)$	$5x+35$

AREA AS PRODUCT	AREA AS SUM

AREA AS PRODUCT	AREA AS SUM

This process of writing these products as a sum uses the distributive property.

Use the distributive property to re-write each expression as a sum. You may want to draw a rectangle on a separate page to follow the technique above.

14. $4(x+7) =$ _____

15. $7(x-3) =$ _____

18. $a(a-1) =$ _____

17. $x(x+9) =$ _____

19. $3m(m+2) =$ _____

21. $a(a-12) =$ _____

Factoring a Common Factor Using Area

NAME _____

Fill in the missing information for each: dimensions, area as product, and area as sum

<p>1.</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;">x</td> <td style="width: 40px; text-align: center;">6</td> </tr> <tr> <td style="width: 20px; text-align: center;">2</td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table> <p style="margin-left: 20px;"><u> </u> <u> </u></p>		x	6	2	<input type="text"/>	<input type="text"/>	<p>2.</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;">5</td> <td style="width: 40px; text-align: center;">$5x$</td> <td style="width: 40px; text-align: center;">20</td> </tr> </table> <p style="margin-left: 20px;"><u> </u> <u> </u></p>		<input type="text"/>	<input type="text"/>	5	$5x$	20	<p>3.</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;">8</td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;">$6x$</td> <td style="width: 40px; text-align: center;">48</td> </tr> </table> <p style="margin-left: 20px;"><u> </u> <u> </u></p>		<input type="text"/>	8	<input type="text"/>	$6x$	48	<p>4.</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;">x</td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;">$10x$</td> <td style="width: 40px; text-align: center;">30</td> </tr> </table> <p style="margin-left: 20px;"><u> </u> <u> </u></p>		x	<input type="text"/>	<input type="text"/>	$10x$	30
	x	6																									
2	<input type="text"/>	<input type="text"/>																									
	<input type="text"/>	<input type="text"/>																									
5	$5x$	20																									
	<input type="text"/>	8																									
<input type="text"/>	$6x$	48																									
	x	<input type="text"/>																									
<input type="text"/>	$10x$	30																									

Fill in the missing dimensions from the expression given.

<p>5. $5x + 35 = 5(\quad)$</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<p>6. $2x + 12 = 2(\quad)$</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<p>7. $3x - 21 = \quad(\quad)$</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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<p>8. $7x - 21 = \quad(\quad)$</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<p>9. $+3x - 15 = +3(\quad)$</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<p>10. $+5x + 45 = \quad$</p> <table border="1" style="margin-left: 20px; border-collapse: collapse;"> <tr> <td style="width: 20px;"></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> <tr> <td style="width: 20px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> <td style="width: 40px; text-align: center;"><input type="text"/></td> </tr> </table>		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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This process of writing a sum or difference as the product of factors is called factoring.

- Factor these:
- | | |
|------------------------------------------|-------------------------------------------|
| 11. $4x - 16 = \underline{\hspace{2cm}}$ | 12. $+7x - 35 = \underline{\hspace{2cm}}$ |
| 13. $9x - 81 = \underline{\hspace{2cm}}$ | 14. $4x + 18 = \underline{\hspace{2cm}}$ |