Distributive Property Using Area

Write the expression that represents the area of each rectangle.

1. \[5 \times 4\]
2. \[7 \times m\]
3. \[a \times 3\]
4. \[x \times x\]

Find the area of each box in the pair.

5. \[x \times 3\]
6. \[a \times 9\]
7. \[x \times 2\]

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

8. \[x + 9\]
9. \[x + 4\]
10. \[a + 2\]

Write the area of each rectangle as the product of \(\text{length} \times \text{width}\) and also as a sum of the areas of each box.

11. \[5(x+7) = 5x + 35\]
12. \[x(x+12)\]
13. \[a(a+8)\]

<table>
<thead>
<tr>
<th>Area As Product</th>
<th>Area As Sum</th>
</tr>
</thead>
<tbody>
<tr>
<td>(S(x+7))</td>
<td>(Sx + 3S)</td>
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</table>

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. \[7(x - 3) = \]
16. \[−2(x + 4) = \]
17. \[x(x + 9) = \]
18. \[a(a - 1) = \]
19. \[3m(m + 2) = \]
20. \[−4(a - 4) = \]