

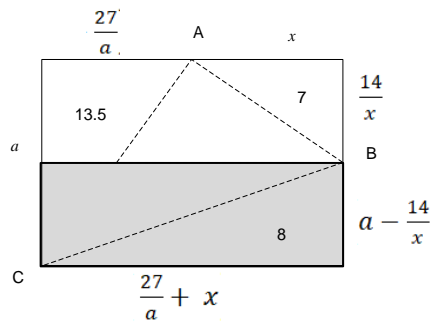
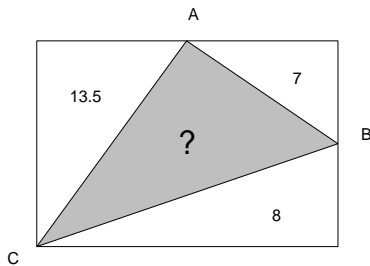
Geometry (Area) Type of Problems in AMC

Problem	Solution													
<p>AMC 8 – Beginner Level</p> <p>A, B, C, and D are integers representing the lengths of the rectangles shown below. Given the indicated areas of the rectangles, determine the values of A, B, C, and D.</p> <div style="text-align: center; margin: 10px 0;"> <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;"></td> <td style="padding: 0 10px;">A in</td> <td style="padding: 0 10px;">B in</td> <td style="padding: 0 10px;"></td> </tr> <tr> <td style="padding: 0 10px; vertical-align: middle;">C in</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">20 in²</td> <td rowspan="2" style="border: 1px solid black; padding: 5px; text-align: center; vertical-align: middle;">14 in²</td> <td style="padding: 0 10px;"></td> </tr> <tr> <td style="padding: 0 10px; vertical-align: middle;">D in</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">15 in²</td> <td style="padding: 0 10px;"></td> </tr> </table> </div>		A in	B in		C in	20 in ²	14 in ²		D in	15 in ²		<p>5 in (A) & 2 in (B) & 4 in (C) & 3 in (D)</p>		
	A in	B in												
C in	20 in ²	14 in ²												
D in	15 in ²													
<p>AMC 8 – Intermediate Level</p> <p>A, B, C, D, and E are integers representing lengths in inches, as shown below. The central shaded region is a square. Using the given areas of the surrounding rectangles, determine the values of A, B, C, D, and E.</p> <div style="text-align: center; margin: 10px 0;"> <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="padding: 0 10px;"></td> <td style="padding: 0 10px;">A in</td> <td style="padding: 0 10px;">B in</td> <td style="padding: 0 10px;"></td> </tr> <tr> <td style="padding: 0 10px;"></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">16 in²</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">42 in²</td> <td style="padding: 0 10px; vertical-align: middle;">C in</td> </tr> <tr> <td style="padding: 0 10px;"></td> <td style="border: 1px solid black; padding: 5px; text-align: center;">12 in²</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">25 in²</td> <td style="padding: 0 10px; vertical-align: middle;">D in</td> </tr> </table> <div style="margin-top: 5px; text-align: center;"> <table style="margin: auto; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px; text-align: center;">E</td> </tr> </table> </div> </div>		A in	B in			16 in ²	42 in ²	C in		12 in ²	25 in ²	D in	E	<p>A = 2, B = 6, C = 7, D = 5, and E = 1</p>
	A in	B in												
	16 in ²	42 in ²	C in											
	12 in ²	25 in ²	D in											
E														

To continue

AMC 8 – Advanced Level (AMC 10)

Four triangles are enclosed in a rectangle as below. If the areas of the three corners are specified, what is the area of the central (shaded) triangle?



$$\left(x + \frac{27}{a}\right) \left(a - \frac{14}{x}\right) = 16$$

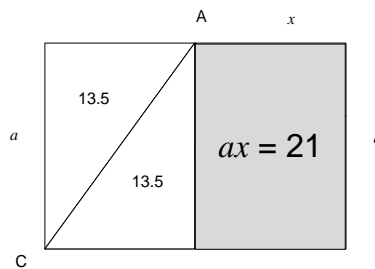
$$ax - 14 + 27 - \frac{27 \times 14}{ax} = 16$$

$$ax - 3 - \frac{21 \times 18}{ax} = 0$$

$$(ax)^2 - 3ax - 21 \times 18 = 0$$

$$(ax + 18)(ax - 21) = 0$$

Thus, $ax = 21$



The area of the whole rectangle is $27 + 21 = 48$.
So, the area of the shaded region = $48 - (13.5 + 7 + 8) = 19.5 \leftarrow \text{ans}$

