

Flanders Junior Olympiad 2004

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- 1 Two 5×1 rectangles have 2 vertices in common as on the picture.
(a) Determine the area of overlap
(b) Determine the length of the segment between the other 2 points of intersection, A and B .

http://www.mathlinks.ro/Forum/album_pic.php?pic_id=290

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- 2 How can you go from the number 11 to 25 by only multiplying with 2 or decreasing with 3 in a minimum number of steps?

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- 3 A car has a 4-digit integer price, which is written digitally. (so in digital numbers, like on your watch probably)

While the salesman isn't watching, the buyer turns the price upside down and gets the car for 1626 less. How much did the car initially cost?

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- 4 How many pairs of positive integers (a, b) satisfy $\frac{1}{a} + \frac{1}{b} = \frac{1}{2004}$?
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