

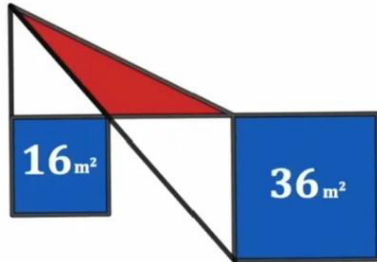
# ChatGPT Problem

9 January 2026

Jim Stevenson

This problem<sup>1</sup> is from BL's Math Games.

What's the area of the red triangle?



BL decided to see what kind of solution ChatGPT would come up with. After several tries and prompts it seemed to oblige. I don't know what BL's prompts were, and in the statement of the problem outside the subscription wall he never explicitly says what the problem is, namely, to find the area of the red triangle.

There also seems to be some ambiguity about the constraints on the problem, that is, how much of the appearance of the diagram should the solver assume?

## Solution

I am assuming the top edges of the two squares are collinear. The drawing suggests that the left edge of the red triangle is on a line that makes a 45° angle, but the statement of the problem does not say that. But if the problem is well-defined and the distance between the large and small squares doesn't matter, we can just look at the simple case where the line does make a 45° angle.

Then the altitude of the red triangle is the length of the side of the small square or 4 and the base of the red triangle is the length of the side of the large square or 6. Therefore the area of the red triangle is  $\frac{1}{2} 4 \cdot 6 = 12$ .

## Is the Problem Well-Defined?

But we should verify that the distance between the squares doesn't matter, that is, that the problem is well-defined. I labeled this distance  $b$ , which is also the base of the red triangle, and the altitude of the red triangle  $h$  (Figure 1).

Then we have the following equation for the area of the red triangle

$$bh = \frac{1}{2} 6(4 + b) - \frac{1}{2} 6b = 12.$$

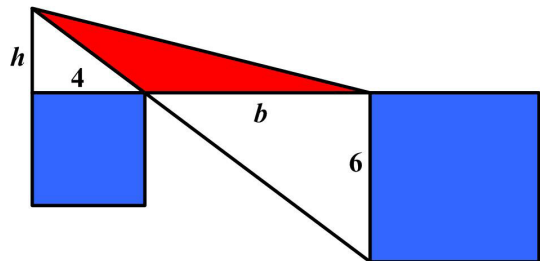


Figure 1

The " $b$ " terms cancel. So, it doesn't matter how far the large blue square is from the smaller blue square.

(You can read BL's original post to see how ChatGPT did, or at least part of the effort if you don't want to subscribe.)

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<sup>1</sup> June 19, 2025 (<https://medium.com/math-games/i-asked-chatgpt-to-solve-this-stupidly-easy-geometry-challenge-1fd9d9ad4cf7>)