Precalculus

§ Text problems leading to polynomial systems

Todor Miley

2019

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$$x^2 + y^2 = 313$$

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$$|(a - b)^{2}| = a^{2} - 2ab + b^{2}$$

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The sum of two numbers x and y is 25 and the sum of their squares is 313. Given that $y \ge x$, find x and y.

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The two solution candidates are x = 12, y = 13 and x = 13, y = 12.

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The two solution candidates are x = 12, y = 13 and x = 13, y = 12. Since $y \ge x$, one of the solutions needs to be discarded and our final answer is x = 12, y = 13.