

Answer on question 34016 – Math – Algebra

if $a+(b*b)=19$ and $(a*a)+b=13$, find the value of a and b

Solution

We have the system of two equations

$$\begin{cases} a + b^2 = 19 \\ a^2 + b = 13 \end{cases} \Rightarrow \begin{cases} a = 19 - b^2 \\ (19 - b^2)^2 + b = 13 \end{cases}$$

We need to solve the equation

$$361 - 38b^2 + b^4 + b - 13 = 0;$$

$$(b - 4)(b^3 + 4b^2 - 22b - 87) = 0;$$

$$b - 4 = 0 \text{ or } b^3 + 4b^2 - 22b - 87 = 0;$$

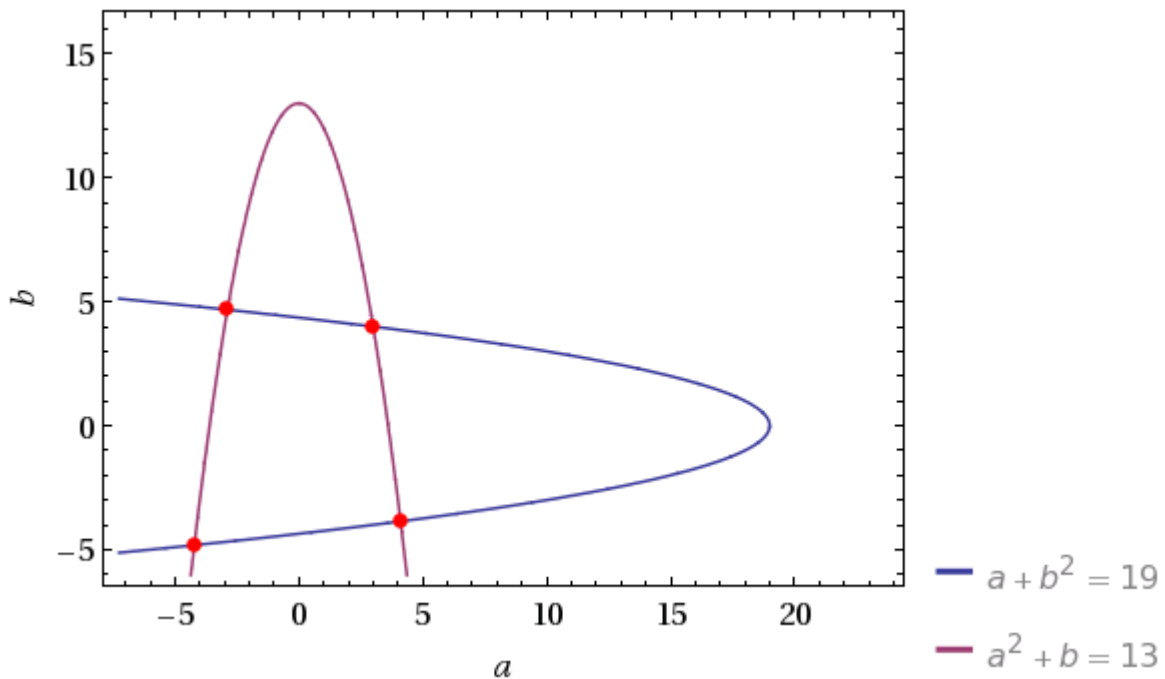
The solutions of the equation

$$x^3 + 4x^2 - 22x - 87 = 0$$

$$x \approx -4.81884$$

$$x \approx -3.85927$$

a respectively equals: 3; -4.22124; -2.88477.



Answer: (3;4), (-4.8;-4.2), (-3.9;-2.9).