Answer on Question #84732 – Math – Algebra

Question

The equation -2x^2=13x-45 is not ready for factoring and solving for x explain wh y. What qualities does it need so that it is ready? Explain how to get. Started solvin g x.

Solution

Quadratic Equation:

$ax^2 + bx + c = 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

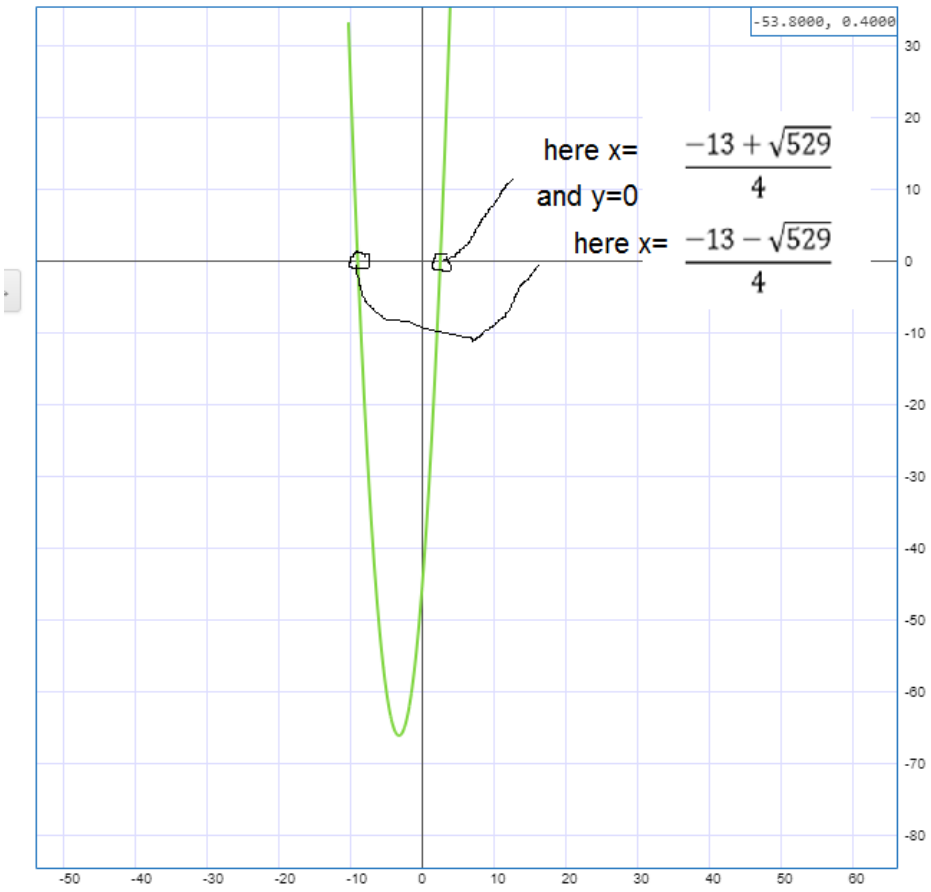
$$D = b^2 - 4ac$$

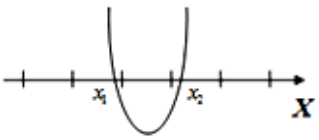
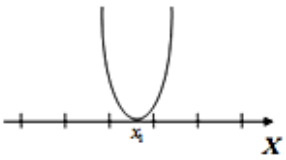
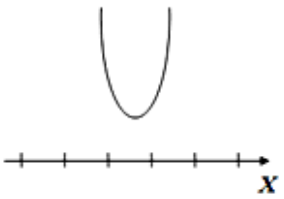
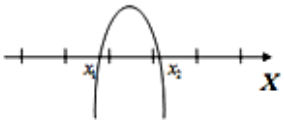
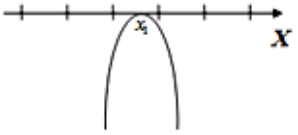
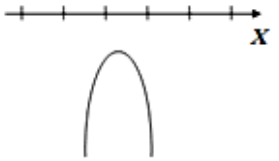
D is the determinant of this equation

$-2x^2=13x-45$

$2x^2+13x-45=0$ => $a=2,\ b=13,\ c=-45$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-13 \pm \sqrt{13^2 - 4 * 2 * (-45)}}{2 * 2} = \frac{-13 \pm \sqrt{529}}{4}$$



	$D>0$	$D=0$	$D<0$
$a>0$			
$a<0$			

When Determinant(D)=0, then one real root

When D>0, then two real roots

When D=0, then no real root.

D=$\sqrt{b^2-4ac}$ => $b^2-4ac \geq 0$

For example,

$2x^2+13x+45=0$ => a=2, b=13, c=+45

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-13 \pm \sqrt{13^2 - 4 * 2 * (45)}}{2 * 2} = \frac{-13 \pm \sqrt{-191}}{4}$$

If D<0, then $\sqrt{-191}$ is a complex number and the equation does not have real roots.