b^2-4ac

always positive

Without solving the equation, state the number of solutions and whether they are real or non-real.

9. $-16x^2+4x+13=0$

$a=-16\ b=4\ c=13$

$16-(4\cdot-16\cdot13)$

848 2 real solutions

10. $7x^2-11x+10=0$ $a=7\ b=-11\ c=10$

$(-11)^2-(4\cdot7\cdot10)$

$121-(4\cdot7\cdot10)$

$-159 \rightarrow$ 2 non real solutions

11. $-x^2-\frac{2}{5}x=1$

$-1\ -1$

$-x^2-\frac{2}{5}x-1=0$

$a=-1$ $b=-\frac{2}{5}$ $c=-1$

$(\frac{2}{5})^2-(4\cdot-1\cdot-1)$

-3.84 2 non real

12. $4x^2+9=12x$

$-12x\ -12x$

$4x^2-12x+9=0$

$a=4\ b=-12\ c=9$

$144-(4\cdot4\cdot9)$

0 1 real solution

Answer the question by writing an equation and determining whether the solutions of the equation are real or non-real.

13. A gardener has 140 feet of fencing to put around a rectangular vegetable garden. The function $A(w)=70w-w^2$ gives the garden's area A (in square feet) for any width w (in feet). Does the gardener have enough fencing for the area of the garden to be 1300 ft^2?

$4x^2-12x+9=0$

$a=4\ b=-12\ c=9$

$x=\frac{12\pm\sqrt{144-(4\cdot4\cdot9)}}{2\cdot4}$

$x=\frac{12\pm\sqrt{0}}{8}$

$x=\frac{12\pm0}{8}$ $\frac{12+0}{8}=\frac{12}{8}$ $<$ $\frac{12-0}{8}=\frac{12}{8}$

$=\frac{12}{8}=\boxed{\frac{3}{2}}$

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