Examining the Solutions to Quadratic Equations

Goals:

- 1. To find the kinds of solutions that quadratic equations yield.
- 2. To build quadratic equations from given solutions.

Definition: The discriminant is
the radicend from the guadratic formula

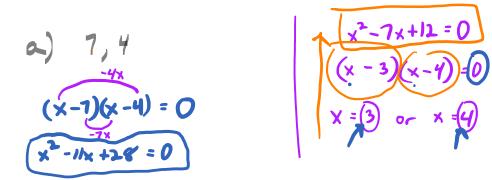
$$ax^{2}+bx+c=0$$

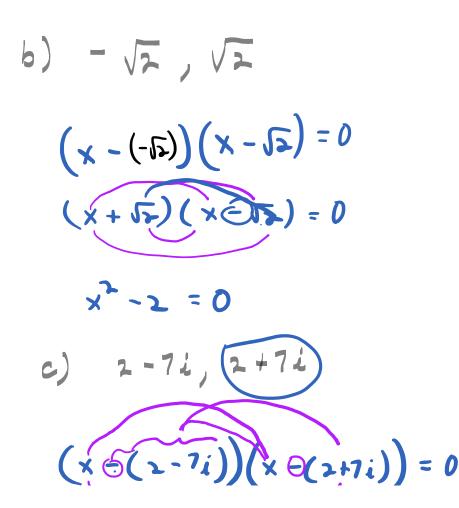
 $x=\frac{-b\pm\sqrt{b^{2}-tac}}{2a}$
 $0=b^{2}-4ac$
Value of Discriminant Nature of Solutions
to $ax^{2}+bx+c=0$
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b) If 0 is not a parter
square, then 2 invested
square, then 2 invested
equation. Classify each solution(s)
according to number type.
a)
$$x^{n} + 2x - 15 = 0$$

 $D = b^{2} - 4ac$
 $= 4 - 4(1)(-15)$
 $= 4 + 60$
 $= 64 > 0$
b) $3x^{n} - 8x = 2$
 $3x^{2} - 8x - 2 = 0$
 $D = b^{2} - 4ac$
 $= 64 > 0$
c) $5x^{n} + 7x + 3 = 0$
 $D = b^{n} - 4ac$
 $= 64 - 4(3)(r)$
 $= 64 - 4(2)(r)$
 $= 64$

- = 49 60 = -11 <0 2 complex solutions
- Find a quadratic equation with the given solutions. Write your answer in the form ax +6x+C=0





 $\left(\times \Theta(2^{-7}i)\right)\left(\times \Theta(2^{+7}i)\right) = 0$ $x^{2} - x(2+7i) - x(2-7i) + (2-7i)(2+7i) = 0$ x2 (2x-7ix -2x+7/x+4 -4i) = 0 x² -<u>4x +4 +49 = 0</u> x²-4x+53=0