1.6 Solving Quadratic Equations Part 3 9/4/19

Ex 1: Solve $2x^2+7x+1=16$

Step 1: $-16 \quad -16$

$2x^2+7x-15=0$

Step 2: $a=2 \quad b=7 \quad c=-15$

Step 3:

$$x=\frac{-(7)\pm\sqrt{(7)^2-4(2)(-15)}}{2(2)}$$

Step 4: $x=\frac{-7\pm\sqrt{169}}{4}$ → 169 → 13 13; $\sqrt{13\cdot13}$; $13\sqrt{\ }$

Step 5: $x=\frac{-7\pm13}{4}$

Step 6: Simplify the whole fraction

$x=\frac{-7+13}{4}=\frac{3}{2}$ $\quad x=\frac{-7-13}{4}=-5$

Ex 2: Solve $2x^2-8x-5=0$

Step 2: $a=2 \quad b=-8 \quad c=-5$

Step 3:

$$x=\frac{-(-8)\pm\sqrt{(-8)^2-4(2)(-5)}}{2(2)}$$

Step 4: $x=\frac{8\pm\sqrt{104}}{4}$ → 104 → 4 26 → 2 2 2 13; $\sqrt{2\cdot2\cdot2\cdot13}$; $2\sqrt{2\cdot13}$; $2\sqrt{26}$

Step 5: $x=\frac{8\pm2\sqrt{26}}{4}$

Step 6: $x=\frac{8+2\sqrt{26}}{4}$ $\quad x=\frac{8-2\sqrt{26}}{4}$

$$x=\frac{4+1\sqrt{26}}{2} \qquad x=\frac{4-1\sqrt{26}}{2}$$

Ex 3: Solve $x^2+6x+25=0$

$a=1 \quad b=6 \quad c=25$

$$x=\frac{-(6)\pm\sqrt{(6)^2-4(1)(25)}}{2(1)}$$

$x=\frac{-6\pm\sqrt{-64}}{2}$

64 → 8 8 → 4 4 → 2 2 2 2

$x=\frac{-6\pm8i}{2}$

$x=\frac{-3\pm4i}{1}$

$x=-3+4i \quad x=-3-4i$