

Class # 17 - Fri Oct. 8

- had in Exam #1 today!

- today :

- first up "completing the square" } "SRP" WW
and the quadratic formula. } "QF" WW set.

→ Last time :

{ we found the solution of $1x^2 + bx + c = 0$ via completing the square / SRP

quadratic formula!
(for $a=1$)

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

WW: "Square Root Property" # 7

(2)

Solve: $x^2 - 4x - 45 = 0$

Same steps
we did
in class
yesterday!

Step 1: Move constant term to RHS:
 $x^2 - 4x = 45$

Step 2: "Complete the square" on LHS
(and add the same #. to RHS)

$$x^2 - 4x + \underline{4} = 45 + \underline{4}$$

$$\left(\frac{b}{2}\right)^2 = \left(\frac{-4}{2}\right)^2 = (-2)^2 = 4$$

Step 3: Factor to LHS

$$(x - 2)^2 = 49$$

Step 4 : Square root of both sides (SRP)

$$x-2 = \pm\sqrt{49}$$

$$\Rightarrow x-2 = \pm 7$$

Step 5 : Finish solving for x :

$$x-2 = 7$$

$$x-2 = -7$$

$$x = 9$$

$$x = -5$$

Check :

(1) Solve by factoring LHS :

$$x^2 - 4x - 45 = 0$$

$$(x+5) \cdot (x-9) = 0$$

\Rightarrow

$$x+5=0 \quad x-9=0$$

$$x = -5 \quad x = 9$$

WW, "SRP" #8:

4

Solve: $x^2 + 4x - 10 = 0$

(1) $x^2 + 4x + 4 = 10 + 4$

(2) $\left(\frac{4}{2}\right)^2 = 2^2 = 4$

(3) $(x + 2)^2 = 14$

(4) $x + 2 = \pm\sqrt{14}$

$\Rightarrow x = \pm\sqrt{14} - 2$

(5) $x = -2 \pm \sqrt{14}$

← rewrite