

● Day 4 → Solving All Methods

① $y = 2x^2 + 3x - 35$

$$\begin{array}{r|l} +3 & -10 \\ \hline 10-7 & 10 \cdot -7 \checkmark \end{array}$$

$$2x^2 + 10x - 7x - 35$$
$$2x(x+5) - 7(x+5)$$

$$(2x-7)(x+5) = 0$$

$$x = 7/2, -5$$

● ② $y = 4n^2 + 11n + 7$

$$\begin{array}{r|l} +11 & 28 \\ \hline 7+4 \checkmark & 7 \cdot 4 \checkmark \end{array}$$

$$4n^2 + 4n + 7n + 7 = 0$$

$$4n(n+1) + 7(n+1) = 0$$

$$(4n+7)(n+1) = 0$$

$$n = -7/4, -1$$

$$\textcircled{3} \quad y = x^2 + 9x - 22$$

$+9$	$x(-22)$
$11-2$	$11x-2 \checkmark$

$$x^2 + 11x - 2x - 22$$

$$x(x+11) - 2(x+11)$$

$$(x-2)(x+11) = 0$$

$$x = 2, -11$$

$$\textcircled{4} \quad 3x^2 - 5x - 6 = y$$

$$a = 3 \quad b = -5$$

$$c = -6$$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(3)(-6)}}{2(3)}$$

$$x = \frac{5 \pm \sqrt{97}}{6}$$

$$x = \frac{5 + \sqrt{97}}{6}$$

$$x = \frac{5 - \sqrt{97}}{6}$$

97
^
? ?

$$\textcircled{5} \quad y = x^2 + 6x - 13$$

$$a = 1 \quad b = 6 \quad c = -13$$

$$x = \frac{-(6) \pm \sqrt{(6)^2 - 4(1)(-13)}}{2(1)}$$

$$x = \frac{-6 \pm \sqrt{88}}{2}$$

$$x = \frac{-6 \pm 4\sqrt{11}}{2}$$

88
^
44
^
4 4

$$x = -3 \pm 2\sqrt{11}$$

$$x = -3 + 2\sqrt{11}$$

$$x = -3 - 2\sqrt{11}$$

$$(6) \quad y = r^2 + 8r$$

$$r(r+8) = 0$$

$$r = 0$$

$$r+8=0$$

$$r = -8$$

$$(7) \quad 3x^2 + 5x - 2$$

$$\begin{array}{r|l} 5 & -6 \\ 6+ & -1 \\ \hline 6+ & -1 \end{array} \checkmark$$

$$3x^2 + 6x - 1x - 2$$

$$3x(x+2) - 1(x+2)$$

$$(3x-1)(x+2) = 0$$

$$3x-1=0$$

$$x = 1/3$$

$$x+2=0$$

$$x = -2$$

$$(8) \quad -x^2 - 6x = -1$$

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

$$0 = x^2 + 6x - 1$$

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

$$\begin{array}{c} 40 \\ \wedge \\ 4 \quad 10 \end{array}$$

$$x = \frac{-6 \pm \sqrt{40}}{2}$$

$$x = \frac{-6 \pm 2\sqrt{10}}{2}$$

$$x = -3 \pm \sqrt{10}$$

$$\boxed{\begin{array}{l} x = -3 + \sqrt{10} \\ x = -3 - \sqrt{10} \end{array}}$$

$$\begin{aligned} \textcircled{9} \quad 5r^2 &= 80 \\ \sqrt{r^2} &= \sqrt{16} \\ r &= \pm 4 \end{aligned}$$

$$r = 4$$

$$r = -4$$

$$\textcircled{10} \quad \sqrt{(x-5)^2} = \sqrt{6}$$

$$x-5 = \sqrt{6}$$

$$\begin{array}{l} x = \sqrt{6} + 5 \\ x = -\sqrt{6} + 5 \end{array}$$