Homework – Quadratic Formula #1

Solve with the quadratic formula

1) $y = x^2 + 5x + 4$

$a=1 \quad b=5 \quad c=4$

$$\frac{-5 \pm \sqrt{5^2-4(1)(4)}}{2(1)} \rightarrow \frac{-5 \pm \sqrt{9}}{2} = \frac{-5 \pm 3}{2}$$

#1: $\frac{-5+3}{2} = \frac{-2}{2} = \boxed{-1}$

#2: $\frac{-5-3}{2} = \frac{-8}{2} = \boxed{-4}$

2) $y = x^2 + 9x + 14$

$a=1 \quad b=9 \quad c=14$

$$\frac{-9 \pm \sqrt{9^2-4(1)(14)}}{2(1)} \rightarrow \frac{-9 \pm \sqrt{25}}{2} = \frac{-9 \pm 5}{2}$$

#1: $\frac{-9+5}{2} = \frac{-4}{2} = \boxed{-2}$

#2: $\frac{-9-5}{2} = \frac{-14}{2} = \boxed{-7}$

3) $y = x^2 - 8x + 12$

$a=1 \quad b=-8 \quad c=12$

$$\frac{-(-8) \pm \sqrt{(-8)^2-4(1)(12)}}{2(1)} \rightarrow \frac{8 \pm \sqrt{16}}{2} = \frac{8 \pm 4}{2}$$

#1: $\frac{8+4}{2} = \frac{12}{2} = \boxed{6}$

#2: $\frac{8-4}{2} = \frac{4}{2} = \boxed{2}$

4) $y = x^2 + 3x - 10$

$a=1 \quad b=3 \quad c=-10$

$$\frac{-3 \pm \sqrt{3^2-4(1)(-10)}}{2(1)} \rightarrow \frac{-3 \pm \sqrt{49}}{2} = \frac{-3 \pm 7}{2}$$

#1: $\frac{-3+7}{2} = \frac{4}{2} = \boxed{2}$

#2: $\frac{-3-7}{2} = \frac{-10}{2} = \boxed{-5}$

5) $y = x^2 - 5x - 6$

$a=1 \quad b=-5 \quad c=-6$

$$\frac{-(-5) \pm \sqrt{(-5)^2-4(1)(-6)}}{2(1)} \rightarrow \frac{5 \pm \sqrt{49}}{2} = \frac{5 \pm 7}{2}$$

#1: $\frac{5+7}{2} = \frac{12}{2} = \boxed{6}$

#2: $\frac{5-7}{2} = \frac{-2}{2} = \boxed{-1}$