NAME _____ DATE _____ PERIOD ____

# 10-4 Skills Practice

## *Solving Quadratic Equations by Using the Quadratic Formula*

**Solve each equation by using the Quadratic Formula. Round to the nearest tenth if necessary.**

**1.** $u^2 - 49 = 0$

**2.** $n^2 - n - 20 = 0$

**3.** $s^2 - 5s - 36 = 0$

**4.** $b^2 + 11b + 30 = 0$

**5.** $c^2 - 7c = -3$

**6.** $p^2 + 4p = -1$

**7.** $a^2 - 9a + 22 = 0$

**8.** $x^2 + 6x + 3 = 0$

**9.** $2x^2 + 5x - 7 = 0$

**10.** $2h^2 - 3h = -1$

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EXAMPLE SOLVE: $-4x^2 + 8x = -3$

NOTES

$-4x^2 + 8x + 3 = 0$ ⇒ Rewrite in $ax^2 + bx + c$ order if necessary

$a = -4$, $b = 8$, $c = 3$

$b^2 - 4ac$ ⇒ Find d, the discriminant first

$(8)^2 - 4(-4)(3)$

$64 + 48$ ⇒ WATCH SIGNS!

$\boxed{112} = d$ ⇒ 112 is discriminant, NOT A perfect SQUARE, there ARE 2 solutions, CANNOT be factored, must use Quadratic Formula.

$\sqrt{112} = 10.58300524$

$\sqrt{112} \approx \boxed{10.58 = \sqrt{d}}$

Q.F. ⇒ $x = \dfrac{-b + \sqrt{d}}{2a}$ $\quad x = \dfrac{-b - \sqrt{d}}{2a}$ ⇒ $\boxed{x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}}$ LONG VERSION

$x = \dfrac{-(8) + 10.58}{2(-4)}$ $\quad x = \dfrac{-(8) - 10.58}{2(-4)}$

$x = \dfrac{2.58}{-8}$ $\quad x = \dfrac{-18.58}{-8}$

$x = -.3225$ $\quad x = 2.3225$

$\boxed{x = \{-.32, 2.3\}}$ ← ANSWER, the ONLY 2 values of x that SATISFY THE ORIGINAL EQUATION.