Practice Quiz 10.6 (Proficiency Standard - ALG.F)

ALG.f.1
For #s 1-6, determine the quadratic equation in standard form.

a) Identify the quadratic equation in standard form by circling the question number.

b) Explain your selection:

1) $4x^2 - 12 = 4$

2) $x^2 - 20x = 44$

3) $0 = x + y - 4$

4) $-11x^2 + 11x - 8 = 0$

5) $y = -x^2 - 8x - 15$

6) $y = -5x - 3$

ALG.f.2
Rewrite a quadratic equation into standard form. Clearly show your work. Circle your answer.

7) $-7n^2 + 3 = 9n - n^2 + 15$

$\underline{3} = 6n^2 + 9n + 15$

$-3$

$0 = 6n^2 + 9n + 12$

OR

$0 = -6n^2 - 9n - 12$
ALG.f.3
(a) Rewrite a quadratic equation into standard form.
(b) Then use the quadratic formula to solve for real solutions.
(c) Clearly show your work!! Round solutions to 2 decimals. Circle your answer.

8) \(-2x^2 + 16 = 4x\)

\(\frac{4x}{-4x} \quad \frac{-4x}{-4x} + 16 = 0\)

\(A = -2 \quad B = -4 \quad C = 16\)

\(X = \frac{4 \pm \sqrt{16 - 4(-2)(16)}}{2(-2)}\)

\(X = \frac{4 \pm \sqrt{144}}{-4}\) \(\text{Perfect SQ (12)}\)

\(X = \frac{4+12}{-4} \quad X = \frac{4-12}{-4}\)

\(|X = -4| \quad |X = 2|\)

\(C: -16 = -16\) \(C: 8 = 8\)

ALG.f.4
For the following word problem:
(a) Sketch and label the graph. Include units and label the variables.
(b) Write the model for height as a function of time using function notation.
(c) Use the quadratic formula to solve. Clearly show your work!!
Round solutions to "ONE DECIMAL". Circle your solutions.
(d) Answer question in a complete sentence.

9) A rocket is launched from atop a 75 ft cliff with an initial vertical velocity of 100 feet per second. How long after the rocket is launched will it hit the ground?

\[ h(t) = -16t^2 + 100t + 75 \]

\(A = -16 \quad B = 100 \quad C = 75\)

\(t = \frac{-100 \pm \sqrt{10000 - 4(-16)(75)}}{2(-16)}\)

\(t = \frac{-100 \pm \sqrt{14800}}{-32}\) \(\text{DO NOT ROUND}\)

\(t = \frac{-100 + 14800}{-32} \quad t = \frac{-100 - 14800}{-32}\)

\(t \approx 6.9 \quad t \approx -4.7\)

\(d\) The rocket hits the ground in about 6.9 seconds.