A.REI.C.7: Quadratic-Linear Systems 2

1 Solve the following system of equations algebraically:
   \[ y = x^2 + 5x - 17 \]
   \[ y = x - 5 \]

2 Solve the following system of equations algebraically for all values of \( x \) and \( y \).
   \[ y = x^2 + 2x - 8 \]
   \[ y = 2x + 1 \]

3 Solve the following system of equations algebraically.
   \[ y = x^2 + 4x - 2 \]
   \[ y = 2x + 1 \]

4 Solve the following system of equations algebraically:
   \[ y = x^2 - 6x + 9 \]
   \[ y = -9x + 19 \]
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Answer Section

1 ANS:
\[ x^2 + 5x - 17 = x - 5 \quad y = -6 - 5 = -11 \quad (-6, -11), (2, -3) \]
\[ x^2 + 4x - 12 = 0 \quad y = 2 - 5 = -3 \]
\[(x + 6)(x - 2) = 0 \]
\[ x = -6, 2 \]

REF: 011538ia

2 ANS:
\[ (-3, -5), (3, 7) \]
\[ x^2 + 2x - 8 = 2x + 1 \quad y = 2(3) + 1 = 7 \]
\[ x^2 - 9 = 0 \quad y = 2(-3) + 1 = -5 \]
\[ x = \pm 3 \]

REF: 081236ia

3 ANS:
\[ x^2 + 4x - 2 = 2x + 1 \]
\[ (-3, -5), (1, 3) \]
\[ x^2 + 2x - 3 = 0 \quad y = 2(-3) + 1 = -5 \]
\[ (x + 3)(x - 1) = 0 \quad = 2(1) + 1 = 3 \]
\[ x = -3 \quad x = 1 \]

REF: 080135a

4 ANS:
\[ x^2 - 6x + 9 = -9x + 19 \quad y = -9(-5) + 19 = 64 \quad (-5, 64) \text{ and } (2, 1) \]
\[ x^2 + 3x - 10 = 0 \quad y = -9(2) + 19 = 1 \]
\[(x + 5)(x - 2) = 0 \]
\[ x = -5, 2 \]

REF: 081439ia