COLLEGE ALGEBRA QUIZ

(1) Solve
$$-3x + 5y + z = 4$$
$$4x - 2y + 3z = 3$$
$$-x + 3y + 2z = 5$$

$(-2, -1, 3)$
(a) Is the system consistent or inconsistent?
consistent
(b) Are the equations dependent or independent?
independent

(2) Solve
$$3w - 4x + 2y = -3$$
$$-w + 2x - 5y = 7$$
$$-2w + 2x + 3y = 4$$

No Solution
(a) Is the system consistent or inconsistent?
inconsistent
(b) Are the equations dependent or independent?
independent

(3) Solve
$$a + b = 8$$
$$c - b = 7$$
$$d - c = 6$$
$$a - d = 5$$

$(13, -5, 2, 8)$
(a) Is the system consistent or inconsistent?
consistent
(b) Are the equations dependent or independent?
independent

(4) Solve

$$-2x + 3y + z = 11$$
$$2x - 3y + 4z = 4$$
$$3x - y + 3z = 4$$

$(-1, 2, 3)$
(a) Is the system consistent or inconsistent?
consistent
(b) Are the equations dependent or independent?
independent

(5) Find a quadratic function that fits the data points (0,-3), (1,-2), and (2,4).
$f(x) = \frac{5}{2}x^2 - \frac{3}{2}x - 3$

(6) The value of 70 coins, consisting of nickels and dimes, is $5.75. How many nickels and dimes are there?
25 nickels and 45 dimes

(7) The Robertson family invested $5000, part at 2.5% and the remainder at 4%. The annual income from both investments is $147.50. What is the amount invested at each rate?
2.5%:$3,500; 4.0%:$1,500

(8) A dietician must plan a dinner menu that provides 742.75 Cal, 13 g of fat, and 28.4 g of protein. One cup of white rice contains 206 Cal, 0.4 g of fat, and 4.3 g of protein. A single 251 g steak contains 679 Cal, 48 g of fat, and 62 g of protein. One medium baked potato contains 161 Cal, 0.2 g of fat, and 4.3 g of protein. How many servings of each are required to provide the desired nutritional values?
2 serving of white rice, $\frac{1}{4}$ serving of steak, 1 serving of baked potato

(9) A student has a total of 215 on three tests. The sum of the scores on the first and second tests exceeds the score on the third test by 45. The second score exceeds the first by 20. Find the three scores.
First Test was 55, Second Test was 75, and Third Test was 85