

MATH 1314 – College Algebra

Applications of Systems of Equations

1. Raymond invested a total of \$10,000 in two bank accounts. The first account paid 4% interest and the second paid 5% interest, both compounded annually. At the end of the first year he earned \$455 interest. How much did Raymond invest in each of the accounts?

2. In 2007 a convenience store sold 10,200 packs of cigarettes. For every 12 packs of filtered cigarettes, it sold 5 packs of unfiltered cigarettes. How many packs of each kind of cigarette did the store sell in 2007?

3. An airplane travels 900 miles in 2 hours with a tail wind. The return trip, into the same wind, takes 2.25 hours. Find the speed of the airplane in still air (the “air speed”) and the speed of the wind (the “wind speed”).

4. A movie theater sells tickets at three prices: \$7 for Adults (persons of ages 13-59), \$4 for Children (persons 12 years old and younger), and \$5 for Senior Citizens (persons of ages 60 and older). One day the theater sold a total of 580 tickets for a total of \$3550. The number of Senior Citizen tickets sold was 20 fewer than the number of children’s tickets sold. How many of each kind of ticket did the theater sell that day?

5. Marcy allowed each of her three children to pick five beads from three bins at the toy store. All of the beads in a particular bin had the same price. The first child selected 2 beads out of Bin 1, 2 beads out of Bin 2, and 1 bead out of Bin 3 for a total of 36 cents. The second child selected 1 bead out of Bin 1, 1 bead out of Bin 2, and 3 beads out of Bin 3 for a total of 43 cents. The third child selected 1 bead out of Bin 1, 2 beads out of Bin 2, and 2 beads out of Bin 3 for a total of 41 cents. What was the price of a bead from each of the three bins?