Sections 7.1 – 7.3 Homework   **Name:** _____

Solve the systems algebraically:

1) $2x - y = 3$
   $4x + 3y = 21$

2) $3x + 2y = 3$
   $6x + 4y = 14$

3) $5x + y = 10$
   $2x + 0.4y = 4$

4) $2x + 4y - z = 1$
   $2x - 4y + 2z = -6$
   $x + 4y + z = 0$

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5) $2x + y + 3z = 1$
$2x + 6y + 8z = 3$
$6x + 8y + 18z = 5$

6) A small corporation borrowed $800,000 to expand its line of toys. Some of the money was borrowed at 8%, some at 9%, and some at 10%. How much borrowed at each rate if the annual interest owed was $67,000 and the amount borrowed at 8% was five times the amount borrowed at 10%?

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7) A department store held a sale to sell all of the 214 winter jackets that remained at the end of the season. Until noon, each jacket was priced at $31.95. At noon, the price of jackets was further reduced to $18.95. After the last jacket was sold, total receipts for the clearance sale were $5108.30. How many jackets were sold before noon? How many were sold after noon?

Sections 7.1 – 7.3 Homework

Homework 7.1-7.3 Solutions

1. $(3,3)$

2. no solution

3. infinite solutions

4. $\left(-1, \dfrac{1}{2}, -1\right)$

5. $\left(\dfrac{3}{10}, \dfrac{2}{5}, 0\right)$

6. $625,000 at 8%
   $50,000 at 9%
   $125,000 at 10%

7. $31.95x + 18.95y = 5108.30$
   $x + y = 214$----------------$\rightarrow y = 214 - x$
   $31.95x + 18.95(214 - x) = 5108.30$
   $13x + 4055.30 = 5108.30$
   $13x = 1053$
   $x = 81$

   81 jackets before noon, and 133 jackets after noon