Worksheet 7.3 – Solving Linear Systems by Linear Combinations – Textbook pages 411-417

LEVEL 1
Solve the linear system using linear combinations. Show your work.

1) $x + y = 11$
   $x - y = 7$

2) $3x + y = -8$
   $-3x + 4y = -2$

3) $2x - 4y = 14$
   $-2x + 3y = -11$

LEVEL 2
Solve the linear system using linear combinations. Show your work.

4) $-x - 5y = 30$
   $2x - 7y = 25$

5) $-6x - 6y = -12$
   $-2x - 2y = -4$

6) $-x + 8y = 16$
   $3x + 4y = 36$

LEVEL 3
Solve the linear system using linear combinations. Show your work.

7) $x = 2y - 3$
   $2y = 3x + 13$

8) $4y + 3x = 15$
   $-3x + 2y = 21$

9) $6x = 4y - 6$
   $2y = -3x + 1$

LEVEL 4

10) The yellow pages identify two different local electrical businesses. Business A charges $50 for a service call, plus $36 per hour for labor. Business B charges $35 for a service call, plus an additional $39 per hour for labor. Write and solve a system of equations to find when both companies will charge the same amount. Let x represent the number of hours for labor and let y represent the total charge.

11) There are sixteen workers employed on a highway project, some at $200 per day and some at $165 per day. The daily payroll is $2745. Write a system of equations and solve to find the number of workers employed at each wage.