MAT1033 Class Worksheet 6

Solve the system by elimination. If the system is inconsistent or has dependent equations, say so.

1) $5x - 5y = 20$
$-3x - 2y = -12$

$15x - 15y = 60$
$-15x - 10y = -60$
$-25y = 0$
$y = 0$

$5x - 5(0) = 20$
$5x = 20$
$x = 4$ $(4,0)$

Solve the system by elimination. If the system is inconsistent or has dependent equations, say so.

2) $-5x + 4y = 2$
$10x - 8y = 4$

$-10x + 8y = 4$
$10x - 8y = 4$
$0 = 8$

Inconsistent

Solve the problem.

3) How many liters of a 30% alcohol solution must be mixed with 40 liters of a 90% solution to get a 60% solution?

$x + 40 = y$
$.3x + 40(.9) = 0.6y$
(See below)

4) The perimeter of a rectangle is 22 cm. One side is 5 cm longer than the other side. Find the lengths of the sides.

$2L + 2W = 22$
$L = w + 5$

$2(w+5) + 2w = 22$
$2w + 10 + 2w = 22$
$4w + 10 = 22$
$4w = 12$
$w = 3$
$L = w + 5 = 8$

Sides = 3, 8

$x + 40 = y \rightarrow -3x - 120 = -3y$
$3x + 360 = 6y$
$3x + 360 = 6y$
$240 = 3y$
$80 = y$

$x + 40 = y$
$x + 40 = 80$
$x = 40$