Simultaneous Equations

1. Solve the following system of equations graphically

   $x + 2y = 10$
   $2x + y = 8$

2. Solve the following system of equations graphically

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

3. Solve each of the systems of equations below using the method of substitution.

   a) $y = 2x$ and $5x + y = 14$ b) $y = 5x - 4$ and $y = 2x + 11$

4. Solve each of the systems of equations below by first eliminating x or y.

a) $x + y = 1$
   $x - y = 3$

b) $4x + y = 11$
   $2x + y = 5$

c) $4x + 5y = 7$
   $7x - 3y = 24$

5. Four sandwiches and 3 hot-dogs cost £7.50.
   Two sandwiches and 4 hot-dogs cost £6.
   Form a system of equations and solve it to find the cost of each sandwich and hot-dog.

6. A photographer produces 2 sizes of print, Standard and Jumbo.

   A customer who orders 24 standard and 5 jumbo prints pays £7.79
   Another customer pays £8.60 for 20 standard and 8 jumbo prints.

   How much would I have to pay for 1 standard and 1 jumbo print ?

7. Solve these pairs of simultaneous equations:

(a) $3x + 5y = -9$, $2x - 3y = 13$

(b) $4x + y = 0$, $5x + 2y = 3$

(c) $3x + 2y = -8$, $4x - 3y = -22$