To run: type dirfield
To change the problem solved, simply edit the function f(x,y)

function dirfield()
    axis([-2 2 -2 2])
    X1 = linspace(-2,2,21); Y1 = linspace(-2,2,21);
    hold on
df(@f,X1,Y1,'x','y','dirfield','r',0);

function yp = f(x,y)
    % warning: f must be vectorized, ie use x.^2
    % problem 1.1
    yp = 3-2*y;
    % problem 1.2
    % yp = 2*y-3;
    % problem 1.3
    % yp = 3+2*y;
    % problem 1.4
    % yp = -1-2*y;
    % problem 1.5
    % yp = 1+2*y;
    % problem 1.6
    % yp = y+2;
\[ y' = 3 - 2y \]
$y' = 3 + 2y$