```
function H = vector_entropy(vec)

  %takes in a 1XN vector of probabilities and returns the shannon entropy of the
distribution

  [x N] = size(vec);
  H = 0;

  for i = 1 : N

    if(vec(i) > 0)

    H = H + vec(i)*spec_log(1/vec(i));

    endif

  endfor

endfunction
```