Solución - 16 de Julio de 2015

Problema 1	10 ptos (2,2,3,3)	

a) 110101010101010 $\rightarrow$ 110 1010 1010 1010 = 6AAA
b) 24 $\rightarrow$ 11000 $\rightarrow$ 011000
c) Sig=+ exp=128-127=1 f=1.0001 $\rightarrow$ 10.001 $\rightarrow$ 2.125
d) 17 = 10001 $\rightarrow$ 1.0001 x 2^4 = 10000011 00010000000000000000000

Problema 2	20 ptos (10,10)	

a)
```
function vRes=encripta(v,n)
   vRes = zeros(1,length(v));
   for k = 1:length(v)
        vRes(k) = mod(v(k)+n , 100);
   end
```

b)
```
function vRes=desEncripta(v,n)
  largo = length(v);
  if (largo==0)
     vRes = [];
  else
      tmp = mod(v(1) - n + 100,100);
      vRes = [tmp,desEncripta(v(2:largo),n)]
  end
```

Problema 3	20 ptos (8,12)	

a)
```
function s = sumaAbs(v,i)
  s=0;
  for k = 1:length(v)
      if k ~= i
          s = s + abs(v(k));
      end
  end
```

b)
```
function r =  esDominanteFilas(M)
  [n,m]=size(M);
  r = 1;
  i = 1;
  while (r==1 && i<=n)
     if abs(M(i,i)) < sumaAbs(M(i,:),i)
        r = 0;
     else
        i = i + 1;
     end
  end
```

Problema 4 | 36 ptos (12,12, 12) |

a)
```
function S = SumaFilas(Af,Ac,Ad,F)
   S = 0;
   lA = length(Af);
   for k = 1:lA
       if Af(k)==F
           S=S + Ad(k);
       end
   end
```

b)
```
function S = SumaFilas(Af,Ac,Ad,F)
   lA = length(Af);
   if (lA == 0)
      S = 0;
   else
      S = SumaFilas(Af(1:lA-1),Ac(1:lA-1),Ad(1:lA-1),F);
      if (Af(lA) == F)
         S = S + Ad(lA);
      end
   end
```

c)
```
function S = SumaFilas(Af,Ac,Ad,P)
   lA = length(Af);
   if (lA == 0)
      S = 0;
   else
      S = SumaFilas(Af(1:lA-1),Ac(1:lA-1),Ad(1:lA-1),F);
      if (Af(lA)+ Ac(lA) == D)
          S = S + Ad(lA);
      end
   end
```

Problema 5 | 14 ptos (9,5) |

a)
```
function res = sinRepetidos(v,K)
  res = [];
  insertados = zeros(K,1);
  n = length(v);
  for i=1:n
    if (insertados(v(i))==0)
        insertados(v(i)) = 1;
        res = [res, v(i)];
    end
  end
```

b)
```
function res = sinRepetidosRec(v,K)
  insertados = zeros(K,1);
  res = sinRepetidosAux(v,insertados);
```

```matlab
function res = sinRepetidosAux(v,insertados)
  lv= length(v);
  if isempty(v)
      res = [];
  elseif (insertados(v(1))==0)
      insertados(v(1)) = 1;
      parcial = sinRepetidosAux(v(2:lv),insertados);
      res = [v(1), parcial];
  else
      res = sinRepetidosAux(v(2:lv),insertados);
  end
```