Inducción Matemática

1) $1+2+3\ldots+n = \frac{n(n+1)}{2}$

$1 = \frac{1(1+1)}{2}$ | $k = \frac{k(k+1)}{2}$

$1 = 1$

$k+1 = \frac{k+1(k+1+1)}{2} \rightarrow k+1+\frac{k(k+1)}{2}$

2) $\frac{2k+2+k^2+k/2}{2} \rightarrow \frac{(k+1)(k+2)}{2}$

2) $(3n+5) = \frac{n(3n+13)}{2}$

$(3(1)+5) = \frac{1(3(1)+13)}{2}$ | $(3k+5) = \frac{k(3k+13)}{2}$

$(3+5) = \frac{1(3+13)}{2}$

$8 = 8$

$(3(k+1)+5) = \frac{k+1(3(k+1)+13)}{2}$ | $2(3k+3+5)+\frac{(k(3k+13)}{2}$

$(3k+3+5) = \frac{k+1(3k+3+13)}{2}$ | $\frac{2(3k+8)+(k(3k+13)}{2}$

$(3k+8) = \frac{(k+1)(3k+16)}{2}$ | $\frac{6k+16+3k^2+13k}{2}$

$(3k+8) = \frac{3k^2+19k+16}{2}$ | $\frac{3k^2+19k+16}{12}$

3) $1+2+3+\ldots+(2n+1)=n(n+2)$

$(2(1)+1)=1(1+2)$

$3=3$

$(2k+1)=k(k+2)$

$(2k+1)=k(k+2)$

$(2(k+1)+1)=k+1(k+1+2)$

$(2k+2+1)=k+1(k+3)$

$(2k+3)=(k+1)(k+3)$

$k(k+2)+(2k+3$

$k^2+2k+2k+3$

k^2+4k+3

$(k+1)(k+3)$

MCD

1) 85, 15 = 5

$85=15.5+0$

$15=5.3+0$

2) 350, 75 = 5

$350=75.4+50$

$75=50.1+25$

$50=25.2+$

$25=5.5+0$

3) 101, 13 = 1

$101=13.7+10$

$13=10.1+3$

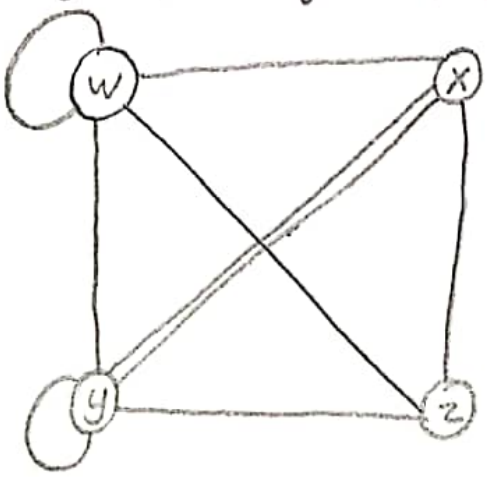
$10=3.1+7$

$3=3.1+0$

Dibujar los grafos y realizar su matriz de adyacencia

$V = \{w, x, y, z\}$

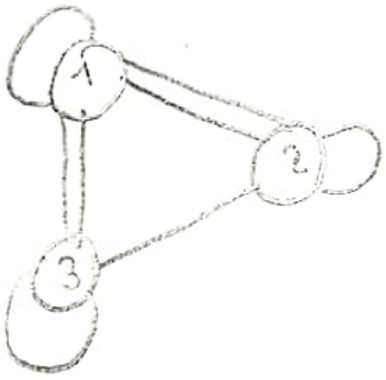
$A = \{wx, wy, wz, ww, xy, xz, yz, zz, zx\}$



	w	x	y	z
w	1	1	1	1
x	1	0	1	2
y	1	1	0	1
z	1	2	1	1

$V = \{1, 2, 3\}$

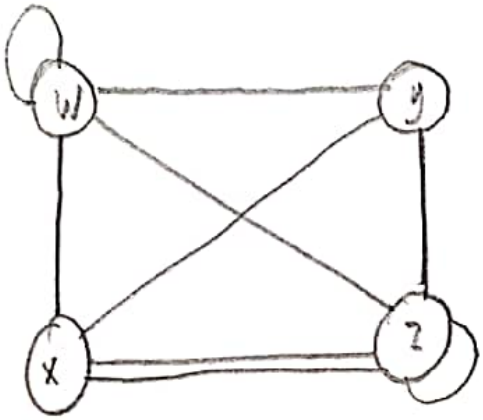
$A = \{11, 12, 13, 21, 22, 23, 33, 31\}$



	1	2	3
1	1	2	2
2	2	1	1
3	2	1	1

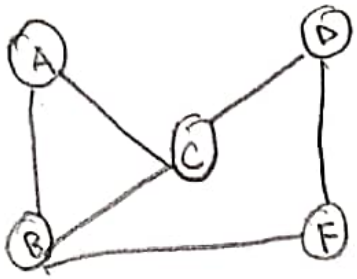
$V = \{w, x, y, z\}$

$A = \{wx, wy, wz, ww, xy, yz, zz, zx\}$



	w	y	x	z
w	1	1	1	1
y	1	0	1	1
x	1	1	0	2
z	1	1	2	1

Encontrar Ruta de Euler
Encontrar Ruta o Circuito de Hamilton



Circuito de Euler

{C, A, B, F, D, C, B}

Circuito de Hamilton

{C, A, B, F, D, C}

Ruta de Hamilton

{D, F, B, A, C}

Nodo	C	B	A	D	F
Grado	3	2	2	2	2
Color					