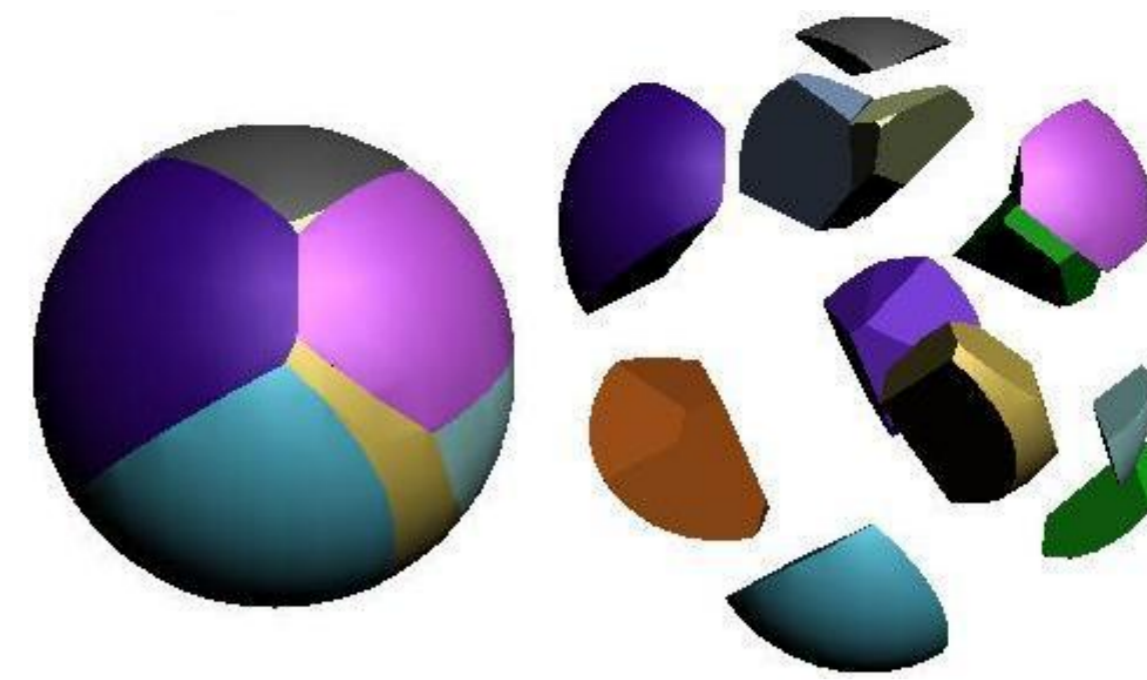Разбиение отдельных членов на слагаемые (как буквенных,так и числовых)

1) $x^3 + 1991x + 1992 = 0$
2) $x^3 - 3x^2 + 2 = 0$
3) $x^4 - x^3 - 13x^2 + x + 12 = 0$
4) $x^3 + 4x^2 - 5 = 0$
5) $x^4 - x^3 - 7x^2 + x + 6 = 0$

$x^3 + 1991x + 1992 = 0$;
$x^3+1991x+1991+1=0$;
$(x^3+1)+1991(x+1)=0$;
$(x+1)(x^2-x+1)+1991(x+1)=0$;
$(x+1)((x^2-x+1)+1991)=0$;
$(x+1)(x^2-x+1992)=0$;
$x1=-1$
$x^2-x+1992=0$;
$D=1-4*1992<0;D<0$;
no solutions

Answer: -1;

$x^3+1992x-x+1992=0$;
$x^3-x+1992x+1992=0$;
$x(x^2-1)+1992(x+1)=0$;
$x(x-1)(x+1)+1992(x-1)=0$;
$(x+1)(x(x-1)+1992)=0$;
$x1=-1$

$(x^2-x+1992)=0$;
$D=1-4*1992<0; D<0$
no solutions

Answer: -1;

$x^3 - 3x^2 + 2 = 0$;
$x^3-2x^2-x^2+2=0$;
$x^3-x^2-2x^2+2=0$;
$x^2(x-1)-2(x^2-1)=0$;
$x^2(x-1)-2(x-1)(x+1)=0$;
$(x-1)(x^2-2(x+1))=0$;
$x1=1$;

$x^2-2x-2=0$
$D=4+8=12; D>0$;
$x2=(2-V12)/2=2-2V3/2=1-V3$;
$x3=(2+V12)/2=2+2V3/2=1+V3$;

Answer: 1;1-V3;1+V3;

$x^4 - x^3 - 7x^2 + x + 6 = 0$;
$x^4-x^3-6x^2+6-x^2+x=0$;
$x^3(x-1)-6(x^2-1)-x(x-1)=0$;
$x^3(x-1)-6(x-1)(x+1)-x(x-1)=0$;
$(x-1)(x^3-6(x+1)-x))=0$;
$x1=1$;
$x^3-6x-6-x=0$;
$x(x^2-1)-6(x+1)=0$;
$x(x-1)(x+1)-6(x+1)=0$;
$(x+1)(x(x-1)-6)=0$;
$x2=-1$;
$x^2-x-6=0$;
$x3=3$;
$x4=-2$;

Answer: 1;-1;3;-2;

$x^3 + 4x^2 - 5 = 0$;
$x^3 - x^2+5x^2-5=0$;
$x^2(x-1)+5(x^2-1)=0$;
$x^2(x-1)+5(x-1)(x+1)=0$;
$(x-1)(x^2+5(x+1))=0$;
$x1=1$
$x^2+5x+5=0$
$D=25-20=5; D>0$;
$x2=(-5-V5)/2$;
$x3=(-5+V5)/2$;

Answer: 1;(-5-V5)/2;(-5+V5)/2;

$x^4 - x^3 - 13x^2 + x + 12 = 0$;
$x^3(x-1)-12x^2-x^2+x+12=0$;
$x^3(x-1)-12x^2+12-x^2+x=0$;
$x^3(x-1)-12(x^2-1)-x(x-1)=0$;
$x^3(x-1)-12(x-1)(x+1)-x(x-1)=0$;
$(x-1)(x^3-12(x+1)-x)=0$;
$x1=1$
$x^3-13x-12=0$;
$x^3-12x-x-12=0$
$x(x^2-1)-12(x+1)=0$;
$x(x-1)(x+1)-12(x+1)=0$;
$(x+1)(x(x-1)-12))=0$;
$x2=-1$;
$x^2-x-12=0$;
$D=1+48=49;D>0; VD=7$;
$x3=1-7/2=-3$;
$x4=1+7/2=4$;

Answer: 1;-1;-3;4