ÚKOL: Určete Taylorův rozvoj polynomun pro dané α

```
> restart;
```

a)
```
> f1:=x^4-3*x^3+2*x^2-5*x+1; alpha:=-3;
```
$$f1 := x^4 - 3x^3 + 2x^2 - 5x + 1$$
$$\alpha := -3$$
```
> taylor(f1,x=alpha,5);
```
$$196 - 206(x+3) + 83(x+3)^2 - 15(x+3)^3 + (x+3)^4$$

b)
```
> f2:=5*x^3-2*x^2+x-2; alpha:=-2;
```
$$f2 := 5x^3 - 2x^2 + x - 2$$
$$\alpha := -2$$
```
> taylor(f2,x=alpha,5);
```
$$-52 + 69(x+2) - 32(x+2)^2 + 5(x+2)^3$$

c)
```
> f3:=x^5+2*x^4+5*x^3-3*x^2-2*x+7; alpha:=1;
```
$$f3 := x^5 + 2x^4 + 5x^3 - 3x^2 - 2x + 7$$
$$\alpha := 1$$
```
> taylor(f3,x=alpha,6);
```
$$10 + 20(x-1) + 34(x-1)^2 + 23(x-1)^3 + 7(x-1)^4 + (x-1)^5$$

d)
```
> f4:=2*x^4-5*x^3+3*x^2+4*x-1; alpha:=2;
```
$$f4 := 2x^4 - 5x^3 + 3x^2 + 4x - 1$$
$$\alpha := 2$$
```
> taylor(f4,x=alpha,5);
```
$$11 + 20(x-2) + 21(x-2)^2 + 11(x-2)^3 + 2(x-2)^4$$

e)
```
> f5:=3*x^5-12*x^4+3*x^3-x+5; alpha:=3;
```
$$f5 := 3x^5 - 12x^4 + 3x^3 - x + 5$$
$$\alpha := 3$$
```
> taylor(f5,x=alpha,6);
```
$$-160 - (x-3) + 189(x-3)^2 + 129(x-3)^3 + 33(x-3)^4 + 3(x-3)^5$$

```
>
```