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MAPLE WORKSHEET FOR THE ANIMATED DISPLAY OF PARTIAL SUMS OF POWER SERIES

Based on a taylor_animate by Doug Meade

EXAMPLES:

```
  pow_series( x^n/n!, n=0..10, x=-5..5 );
  pow_series( (-1)^(n+1)/n*(x/2)^n, n=1..5, x=-3..3 );
  pow_series( (-1)^(n+1)/n*(x-1)^n, n=1..5, x=-1..3 );
```

```
> with(plots):
```

```
> pow_series := proc( TERM, INDEX:name=range, DOMAIN:name=range )
    local N, X;
    global lo, hi, T, p_sum;
    N := lhs(INDEX);
    lo := op(1,rhs(INDEX));
    hi := op(2,rhs(INDEX));
    X := lhs(DOMAIN);
    T := unapply(TERM,N,X);
    p_sum := (n,x)->sum(T(N,x),N=lo..n);
    animate( 'p_sum(trunc(t),x)', x=rhs(DOMAIN), t=lo..hi, frames=hi-lo+1 );
  end:
```

```
> pow_series( x^n/n!, n=0..10, x=-1..1 );
> pow_series( (-1)^(n+1)/n*(x-1)^n, n=1..20, x=-1..3 );
> pow_series((-1)^(n+1)/n*(x/2)^n, n=1..10, x=-3..3 );
>
```