Centered difference approximation $O(h^2)$ to estimate the first derivative of func at x

Because a decrease in step size can lead to subtractive cancellation, as the truncation errors are decreased the roundoff errors are increased.

Starting with h=1, divide n times the step size by a factor of 10 to demonstrate how roundoff becomes dominant as h is reduced.

Returns: vectors of

h: step size

fd: approximation

te: true error

```
function [h, fd, te] = diffex(func,x,n)

    f=sym(func);                    % function handle a simbolica
    df=diff(f);
    dfunc = matlabFunction(df);     % simbolica a function handle
    dftrue=dfunc(x);                % dftrue=double(subs(df,x))

    i = 0:1:n-1;
    h = 1./10.^i;
    fd = (func(x + h) - func(x - h))./(2*h);
    te = abs(dftrue-fd);

end
```