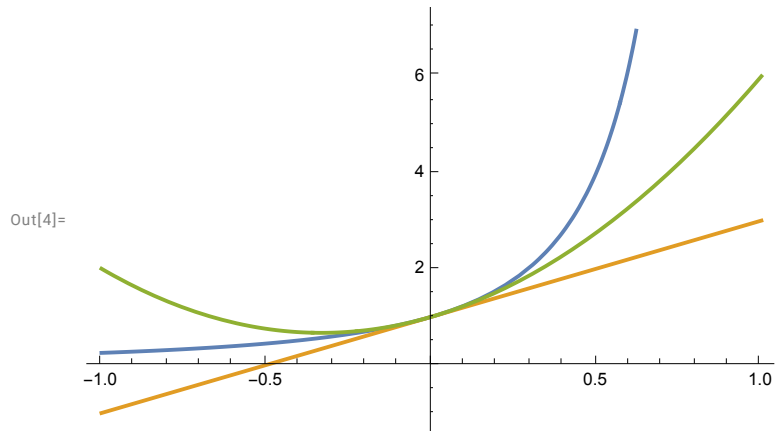# Maclaurin Series Expansion of $\frac{1}{(1-x)^2}$

In[4]:= `Plot[{1 / (1 - x)^2, 1 + 2 x, 1 + 2 x + 3 x^2}, {x, -1, 1}]`

Out[4]=

Above, in blue is the original function, $\frac{1}{(1-x)^2}$. In orange is the linear approximation. In green is the quadratic approximation.

Using the same color scheme below, but with the original function being $\cos \pi x$, are the original function, the linear approximation, and the quadratic approximation.

Taylor Series Expansion of $\cos \pi x$ Near $x = 1$

In[5]:= `Plot[{Cos[Pi x], -1, -1 + Pi^2 (x - 1)^2 / 2}, {x, 0, 2}]`

Out[5]=