

---

**Ex 1** Marginal sales for a company  $t$  years into the future are estimated to be given by  $s(t) = \frac{160}{(t+1)^2}$  thousand units sold per year. Determine the net change in sales...

(a) ...over the next three years.

(b) ...in the long run.

**Ex 2** When a political campaign puts out an ad,  $t$  weeks later, the advertisement is being seen at a rate of  $600te^{-2t}$  thousand new viewers per week. How many new viewers should the political campaign expect to see the ad in the long run?

**Ex 3** Uday wishes to endow a scholarship at a local college with a gift that provides a continuous income stream at the rate of  $25000 + 1200t$  dollars per year in perpetuity. Assuming the prevailing annual interest rate stays fixed at 5% compounded continuously, what donation is required to finance the endowment?