



A combination of hundreds of climate studies have traced changes in the average temperature of Earth since before the Industrial Revolution in the 1800's. The temperature data after 1960 can be approximated by the function

$$T(X) = +0.10X + 0.05$$

The function $T(X)$ gives the change in world temperature in degrees Celsius, and X is the number of decades since 1960.

For example, 1960-1969 is the decade $X=0$, and at this time, $T(0) = +0.05$, which means that the world was +0.05 C warmer than its average temperature before 1960.

Problem 1 - Graph this function over the period from 1960 to 2050.

Problem 2 - What does it predict for the temperature change in 2000 and in 2050?

Problem 1 –

Problem 2 - For 2000, $X = 4$ decades, so $T(4) = +0.45$ Celsius.

For 2050, $x=9$ decades $T(9) = + 0.95$ Celsius.

Graph - Global temperature trend expressed as both the annual and five-year departure (anomaly) from the long-term mean temperatures, measured over 120 years (Hansen et al., 1999).