

3. [10 points] Jim's new car came with an information sheet about the typical fuel efficiency of the car at different speeds. The fuel efficiency, E , is measured in miles per gallon (mpg) and the speed, v , is measured in miles per hour (mph). A portion of the spreadsheet is given here:

E	15	20	22.925	25	26.61	27.925
v	10	20	30	40	50	60

- a. [4 points] Jim notices that, for the range of values in this table, v grows exponentially with E . Find an exponential function f so that $v = f(E)$.

- b. [3 points] Give a practical interpretation of $f^{-1}(17) = 19$.

- c. [3 points] Give a practical interpretation of $(f^{-1})'(25) = 0.3$.