

# Flying backwards

The weight of the atmosphere pressing down on your shoulders is given by atmospheric pressure. Atmospheric pressure also tells you the density of the air, and so how much oxygen you get in each breath. Atmospheric pressure in kilopascals (kPa) at a given altitude in meters is given by the following table:

altitude (m)	pressure (kPa)
0	101.33
500	99.49
1000	97.63
1500	95.91
2000	94.19
2500	92.46
3000	90.81
3500	89.15
4000	87.49
4500	85.91
5000	84.33
6000	81.22
7000	78.19
8000	75.22
9000	72.4
10000	69.64
15000	57.16

1. Let  $P(h)$  mean the atmospheric pressure at height  $h$ . Describe the domain and range of  $P(h)$ .
2. What would the be the input for the function  $P^{-1}$ ? Give units and describe the meaning of this inverse function.

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In practical terms, explain the following in a sentence, using units.

3.  $P(8000)$

4.  $P^{-1}(85.91)$

5.  $P'(45000)$

6.  $(P^{-1})'(72.4)$