
Estimating the Amount of Hype Satisfied by your Packed Lunch

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Suppose that one day you get into a mathematical argument with your peers. In the midst of this argument, you blasphemously suggest that π is exactly equal to 4. In a fit of rage, your colleagues sieze you, break your legs and leave you to die on a desert island. Unbeknownst to them, you miraculously heal in time to gather your resources and survive on this island; as such, you construct a nice little shelter for yourself. Weeks go by, and you find that on this desert island there is one single kiosk, and one kitchen. By this point, your makeshift tent is beginning to fall apart and you need to get to work on fixing it so you can enjoy another day of proving $\pi = 4$ without getting soaked.

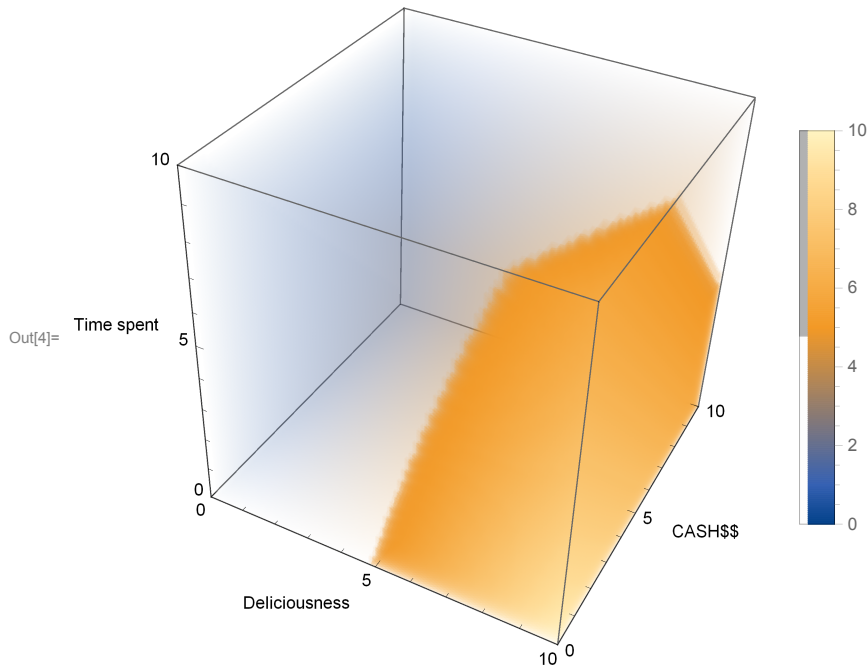
However, you haven't eaten anything in a very long time, and you are significantly hyped for whatever lunch may be heading your way. You have the money to pay in the kiosk, but alternatively you could make your own lunch. You need some way of determining which type of lunch will provide the maximum quenching of your hype so that you can operate with maximum efficiency.

Luckily for you - this is quite possible!

In[21]:= $H[d_, c_, t_] := d e^{(-0.01 c - 0.05 t)}$

H gives a measure of the hype satisfied out of 10. The d denotes the deliciousness of the meal, the c represents the cash spent, and the t denotes the time spent in waiting/packing the lunch.

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In[4]:= DensityPlot3D[H[d, c, t], {d, 0, 10}, {c, 0, 10}, {t, 0, 10},
  PlotLegends -> Automatic, AxesLabel -> {"Deliciousness", "CASH$$", "Time spent"}]
```



For instance, say you went to the kiosk. You estimate the deliciousness to be a 9. You know that you will have to wait 3 minutes, and pay \$5. Then the hype satisfaction will be:

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In[22]:= H[9, 5, 3] // N
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Out[22]= 7.36858
```

Hype will be a 7 out of 10.

Alternatively, say you decide to take the classical route, and pack your lunch yourself. You estimate that the deliciousness will be a 6, it will take 2 minutes, and you will pay no fee. Then:

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In[24]:= H[6, 0, 2]
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Out[24]= 5.42902
```

The hype will be 5/10.

You conclude then, that it would be more beneficial to go with the purchased lunch.

Now in the future, you can optimize your decisions of whether to pack lunch or purchase food and enjoy a healthier and more balanced lifestyle.