Discounts on apparel

This shopping season you are having fun at the Mall. The Mall owner, himself, is quite stressed out having to manage the influx of customers.
He is struggling to calculate the discounts that he has on his clothing line. You decide to help him out by building a system that calculates the discounts on all the applicable items a customer has bought.

There are several categories of products. In fact, categories have subcategories which themselves can have subcategories. Below is a diagram.
Casuals is a subcategory of Trousers, which by itself is a subcategory of Men's wear. Some categories have discounts.

```
Men's wear                Women's wear (50% off)
|- Shirts                 |- Dresses
|- Trousers               |- Footwear
|- Casuals (30% off)
|- Jeans   (20% off)
```

Each product you have belongs to a brand which by themselves are running discounts. Below is a table that lists them:

Brands	Discounts:
Wrangler	10%
Arrow	20%
Vero Moda	60%
UCB	None
Adidas	5%
Provogue	20%

This way, a product can have three types of discounts applicable:
1. Discount on the brand
2. Discount on the category
3. Discount on the ancestor category (e.g. Footwear doesn't have a discount, but it's parent category Women's wear has 50% off). It is worth noting, that it is an ancestor: not just a direct parent, anyone in the lineage.

The discount that is applied is the greatest of the above three. For example, if the customer buys a Jeans of Wrangler

Brand, the discounts are:
1. Discount on brand: 10%
2. Discount on category (Jeans): 20%
3. Discount on parents (Trousers, Men's wear): None
So, the discount that is applied 20%.

Inventory (the list of items that shop has):

Id	Brand	Category	Price	Discounted Price
1	Arrow	Shirts	800	640
2	Vero Moda	Dresses	1400	560
3	Provogue	Footwear	1800	900
4	Wrangler	Jeans	2200	1760
5	UCB	Shirts	1500	1500

You will be given the above table (without discounted price) in CSV form as standard input. This is the shop inventory.
You'll also get the customer options as comma separated Id's after a newline. In the example below, 1,2,3,4 are the customer choices.

Sample Input:

```
5
1, Arrow,Shirts,800
2, Vero Moda,Dresses,1400
3, Provogue,Footwear,1800
4, Wrangler,Jeans,2200
5, UCB,Shirts,1500

2
1,2,3,4
1,5
```

Expected output:

```
3860
2140
```