$bedrooms(x, y)$	x has y bedrooms
$price(x, y)$	y is the price for x
$floor(x, y)$	x is on the yth floor
$garden(x, y)$	x has a garden of size y
$elevator(x)$	there is an elevator in the house of x
$pets(x)$	pets are allowed in x
$central(x)$	x is centrally located

We also make use of the following predicates:

$acceptable(x)$	flat x satisfies Carlos's requirements
$offer(x, y)$	Carlos is willing to pay \$ y for flat x

Now we present Carlos's firm requirements. Any apartment is a priori acceptable.

$$r_1 : \ apartment(X) \Rightarrow acceptable(X)$$

However, Y is unacceptable if one of Carlos's requirements is not met.

$$r_2 : \ bedrooms(X, Y), Y < 2 \Rightarrow \neg acceptable(X)$$

$$r_3 : \ size(X, Y), Y < 45 \Rightarrow \neg acceptable(X)$$

$$r_4 : \ \neg pets(X) \Rightarrow \neg acceptable(X)$$

$$r_5 : \ floor(X, Y), Y > 2, \neg lift(X) \Rightarrow \neg acceptable(X)$$

$$r_6 : \ price(X, Y), Y > 400 \Rightarrow \neg acceptable(X)$$

Rules r_2-r_6 are exceptions to rule r_1, so we add

$$r_2 > r_1, \ r_3 > r_1, \ r_4 > r_1, \ r_5 > r_1, \ r_6 > r_1$$

Next we calculate the price Carlos is willing to pay for an apartment.