

## 1 Exercise: predicate logic

Translate the following natural language sentences into Predicate Logic. You'll want to use logical connectives from propositional logic (like  $\neg$ ,  $\&$ ,  $\vee$ , and  $\rightarrow$ ) for some of them.

1. Maz saw Rey SEE(m,r)
2. BB-8 is orange ORANGE(b)
3. Jakku is near this planet NEAR(j, this planet) or NEAR(j,p)
4. The droid showed the map to the scavenger  
SHOW(the droid, the map, the scavenger) or SHOW(d,m,s)
5. Luke is old and Rey isn't OLD(l)  $\&$   $\neg$ OLD(r)
6. Finn is a brave Stormtrooper  
BRAVE(f)  $\&$  STORMTROOPER(f)
7. Leia knows Luke and Rey found him  
KNOW(e,u)  $\&$  FIND(r,u)  
(make sure you use different constants (letters) for "Leia" and "Luke"; you could also do e.g.,  $l_1$  vs.  $l_2$ !)
8. If Luke returns, Leia will be happy  
RETURN(u)  $\rightarrow$  HAPPY(e)