1 POLYMORPHISM AND DYNAMIC BINDING

1.

***create*** *hero.make (“Althea”)*  
*hero.level\_up*

it doesn’t compile because HERO is deferred class.

2.

***create*** *{HEALER} warrior.make (“Diana”)*  
*warrior.level\_up*

It doesn’t compile because we can’t cast warrior to HEALER. Warrior is not descendant of HEALER.

3.

***create*** *warrior.make (“Thor”)*  
*warrior.level\_up*

Output: “Thor is now a level 2 warrior”

4.

***create*** *warrior.make (“Thor”)*  
***create*** *healer.make (“Althea")*  
***create*** *l.make*  
*l.extend (warrior)*  
*l.extend (healer)*  
***across*** *l* ***as*** *h* ***loop*** *h.item.level\_up* ***end***

Output: “Thor is now a level 2 warrior”

“Althea is now a level 2 healer”

5.

***create*** *warrior.make (“Thor”)*  
***create*** *healer.make (“Althea”)*  
*warrior.do\_action (healer)*

There is no “do\_action” feature in WARRIOR class, we renamed it to “attack”

6.

***create*** *{WARRIOR} hero.make (“Thor")*  
***create*** *{HEALER} hero.make (“Althea")*  
***create*** *l.make*  
*l.extend (hero)*  
***across*** *l* ***as*** *h* ***loop*** *h.item.level\_up* ***end***

Output: “Althea is now a level 2 healer”

7.

***create*** *{WARRIOR} hero.make (“Thor”)*  
*hero.do\_action (hero)*  
***create*** *{HEALER} hero.make (“Althea”)*  
*hero.do\_action (hero)*

Output: “Thor attacks Thor. Does 5 damage”

“Althea heals Althea by 0 points”

8.

***create*** *warrior.make (“Thor")*  
***create*** *healer.make (“Althea")*  
***create*** *l.make*  
*l.extend (warrior)*  
*l.extend (healer)*  
***across*** *l* ***as*** *h* ***loop*** *h.item.do\_action (warrior)* ***end***

Output: “Thor attacks Thor. Does 5 damage”

“Althea heals Thor by 5 points”

9.

**create** *{WARRIOR} hero.make (“Thor”)*  
*warrior := hero*  
*warrior.attack (hero)*

It doesn’t compile. Warrior and hero are not compatible types.