

1.

2.

a.

b.

- i. An advantage for arrays is providing $O(1)$ access time to see the element and a disadvantage is adding or removing elements since you would have to shift the whole array. An advantage for lists is that adding or removing elements wouldn't be as costly since you wouldn't have to shift the whole thing and a disadvantage is a slower access time since you have to shift through the whole list to find the element you want.
- ii. `checkrep()` is put at the end because as said the methods can't modify `RatNum` so it's sufficient to check at the end of the methods. `RatPoly` can only be wrong at its initial state therefore we only have to check if its representation is incorrect once it is created.