8.1 (a) Movie titles from least popular to most popular

Fifty\_Shades\_of\_Grey

The\_Last\_Airbender

Magic\_Mike

Prometheus

Bridemaids

World\_War\_Z

Man\_of\_Steel

Mad\_Max:\_Fury\_Road

Drive

Thor

Pitch\_Perfect

The\_Hunger\_Games

Fast\_Five

The\_Hateful\_Eight

Iron\_Man\_2

The\_Perks\_of\_Being\_a\_Wallflower

American\_Hustle

The\_Help

Avengers:\_Age\_of\_Ultron

21\_Jump\_Street

Captain\_America:\_The\_First\_Avenger

Les\_Miserables

Star\_Wars:\_The\_Force\_Awakens

Jurassic\_World

The\_Great\_Gatsby

X-Men:\_First\_Class

The\_Revenant

Her

Ex\_Machina

Room

Django\_Unchained

The\_Girls\_with\_the\_Dragon\_Tattoo

Frozen

Midnight\_in\_Paris

The\_Avengers

Wolf\_of\_Wall\_Street

Harry\_Potter\_and\_the\_Deathly\_Hallows:\_Part\_1

Black\_Swan

Toy\_Story\_3

Harry\_Potter\_and\_the\_Deathly\_Hallows:\_Part\_2

Gone\_Girl

The\_Theory\_of\_Everything

12\_Years\_a\_Slave

Now\_You\_See\_Me

The\_Social\_Network

The\_Martian

Shutter\_Island

Interstellar

The\_Dark\_Knight\_Rises

Inception

(e)

|  |  |
| --- | --- |
| iteration | log-likelihood |
| 0 | -23.6819 |
| 1 | -14.3412 |
| 2 | -12.9096 |
| 4 | -12.1506 |
| 8 | -11.8679 |
| 16 | -11.6822 |
| 32 | -11.5655 |
| 64 | -11.5401 |

(f) My unseen movies from least expected rating to most expected rating

Drive

Prometheus

Magic\_Mike

Bridemaids

American\_Hustle

World\_War\_Z

Fast\_Five

The\_Perks\_of\_Being\_a\_Wallflower

Mad\_Max:\_Fury\_Road

Thor

The\_Hateful\_Eight

Midnight\_in\_Paris

Black\_Swan

Her

Wolf\_of\_Wall\_Street

Room

The\_Girls\_with\_the\_Dragon\_Tattoo

The\_Help

The\_Avengers

Ex\_Machina

Pitch\_Perfect

Captain\_America:\_The\_First\_Avenger

Django\_Unchained

21\_Jump\_Street

The\_Theory\_of\_Everything

12\_Years\_a\_Slave

The\_Revenant

Now\_You\_See\_Me

Interstellar

Shutter\_Island

The\_Martian

Gone\_Girl

X-Men:\_First\_Class