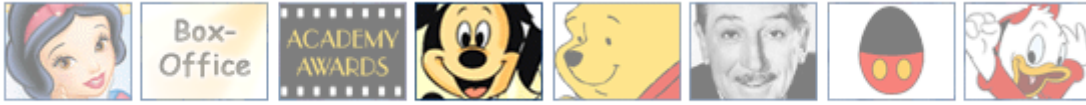


Mathematical Modeling Challenge

What is the Problem?



What is the best Disney Movie?

What do we know?

Disney movies are fun for all ages.
There are lots of princess movies.
Some are animated and some are movies with real actors.
There is a happy ending.

What do we need to know?

We can find out

- The movie that made the most money
- The most watched movie in the first week
- The most awarded movie

Data from Disney Movies:

<http://www.the-numbers.com/movies/distributor/Walt-Disney>

Box Office

<http://www.boxofficemojo.com/studio/chart/?studio=buena-vista.htm&view=parent>

Awards

<http://www.disneyclips.com/funfacts/awardnom2.html>

Sample data

Rank	Movie Title (click to view)	Studio	Total Gross / Theaters		Opening / Theaters		Open
1	Star Wars: The Force Awakens	BV	\$936,662,225	4,134	\$247,966,675	4,134	12/18/15
2	Marvel's The Avengers	BV	\$623,357,910	4,349	\$207,438,708	4,349	5/4/12
3	Rogue One: A Star Wars Story	BV	\$532,086,311	4,157	\$155,081,681	4,157	12/16/16
4	Finding Dory	BV	\$486,295,561	4,305	\$135,060,273	4,305	6/17/16
5	Beauty and the Beast (2017)	BV	\$459,833,200	4,210	\$174,750,616	4,210	3/17/17
6	Avengers: Age of Ultron	BV	\$459,005,868	4,276	\$191,271,109	4,276	5/1/15
7	Pirates of the Caribbean: Dead Man's Chest	BV	\$423,315,812	4,133	\$135,634,554	4,133	7/7/06
8	Toy Story 3	BV	\$415,004,880	4,028	\$110,307,189	4,028	6/18/10
9	Iron Man 3	BV	\$409,013,994	4,253	\$174,144,585	4,253	5/3/13
10	Captain America: Civil War	BV	\$408,084,349	4,226	\$179,139,142	4,226	5/6/16
11	Frozen	BV	\$400,738,009	3,742	\$243,390	1	11/22/13
12	The Jungle Book (2016)	BV	\$364,001,123	4,144	\$103,261,464	4,028	4/15/16
13	Inside Out	BV	\$356,461,711	4,158	\$90,440,272	3,946	6/19/15
14	Zootopia	BV	\$341,268,248	3,959	\$75,063,401	3,827	3/4/16
15	Finding Nemo	BV	\$339,714,978	3,425	\$70,251,710	3,374	5/30/03
16	Alice in Wonderland (2010)	BV	\$334,191,110	3,739	\$116,101,023	3,728	3/5/10
17	Guardians of the Galaxy	BV	\$333,176,600	4,088	\$94,320,883	4,080	8/1/14
18	The Lion King	BV	\$312,855,561	2,624	\$1,586,753	2	6/15/94
19	Pirates of the Caribbean: At World's End	BV	\$309,420,425	4,362	\$114,732,820	4,362	5/25/07
20	Pirates of the Caribbean: The Curse of the Black Pearl	BV	\$305,413,918	3,416	\$46,630,690	3,269	7/9/03

Do the math:

What do you notice and wonder about the data in the table? How did the box office rank the “best” movie? What other ways can you choose the “best” movie?

* What math did you use to determine the best movie? What would you use as criteria for rating and ranking the “best” Disney movie? What is most important to you? What is most important to your friend? Do you agree on the criteria?

Does the solution make sense?

How can you Revise, Refine and Report your solution? How might others come to a different solution?