1.

```
SELECT film_id, title
FROM film
```

"Seq Scan on film (cost=0.00..64.00 rows=1000 width=19)"

SELECT * FROM film
"Seq Scan on film (cost=0.00..64.00 rows=1000 width=384)"

Cost is the same, but there is more width when querying the entire table.
The only difference is the width as the rows are the same. You can reduce the cost by refining the query.

2. and 3.
See excel sheet

4. The data will be loaded into the data warehouse by the data engineers. They will use ETL. First, they will collect the data form the Android apps. Next, they will need to convert the data from the Android app to another format to match the data that is already in the database. Lastly, they will load the data into the data warehouse once it is in the correct format.

If I would analyze the data before it is converted and added to the warehouse there could be a number of problems. I may not be able to read the data in the Android format or I may be able to read it, but when I attempt to convert it to a format that I can query there may be mistakes, duplicate, incorrect, or missing data. It may also limit my ability to join tables.

BONUS

```
SELECT rating,
        MIN(replacement_cost) AS minimum_replacement_cost,
        MAX(replacement_cost) AS maximum_replacement_cost
FROM film
GROUP BY rating
ORDER BY CASE
 WHEN rating = 'G' THEN 1
 WHEN rating ='PG' THEN 2
 WHEN rating ='PG-13' THEN 3
 WHEN rating = 'R' THEN 4
 WHEN rating = 'NC-17' THEN 5
 END
```

Data Output | Messages | Notifications

	rating mpaa_rating	minimum_replacement_cost numeric	maximum_replacement_cost numeric
1	G	9.99	29.99
2	PG	9.99	29.99
3	PG-13	9.99	29.99
4	R	9.99	29.99
5	NC-17	9.99	29.99