"The Science of Interstellar" **Name_____**

"Interstellar" Prep Qs **Date_____ Class_____**

1. A _____ is defined by Dr. Thorne as a region in space where the _____ of the _____-_____ fabric has become infinitely _____.

2. Why can't we use current spacecraft technology to go "Interstellar" and reach the potentially habitable planets we are discovering around other stars like Kepler 186f?

3. Why must GPS systems factor in Einstein's curved space-time? (Hint: Since they are farther away from Earth, _____ passes _____er for them since their space-time isn't curved that much.)

4. Why are negative mass or negative energy needed to create a wormhole like the one in the movie?

5. A wormhole is a _____ from a flat piece of paper that has _____ out a sphere in _____ dimensions.

6. How did Dr. Ghez's observations over 20 years confirm that there is indeed a black hole at the center of our Milky Way galaxy? (Hint: Describe what causes and is known because of the motion of the objects she has tracked.)

7. Why are we not at risk at all of being eaten by a black hole?

8. Once the special effects team turned his black hole equations into an image, what about it surprised Dr. Thorne? (Hint: We discussed this already.)

9. Since the making of this video in early 2015, what has been detected that they say hasn't been to further confirm Einstein's brilliant way of looking at gravity?

10. What real historical event in the U.S. was the not-so-distant future Earth in the movie modeled after? Where in the U.S. is that event beginning to occur again today?

11. In what way is today's dust dirtier than the dust from the 1930s?

12. Besides man-made causes, describe a couple of other possible catastrophic events that are good cause to go "Interstellar" so we don't continue to have all of humanity's "eggs in one basket."