

# “Interstellar” Movie Review Worksheet

Your name: \_\_\_\_\_; FSU Course to credit: \_\_\_\_\_;  
Date of viewing: \_\_\_\_\_; Points (up to 12 extra-credit):

This exercise is intended for Professor Mattox’s Astronomy Students, but may also be done by ambitious NSCI 110 students. Last modified 8/14/15.

Why did Murphy Cooper get into a fist fight at school?

What became of Cooper's meeting at Murphy's School about her fist fight? Was Cooper being a good parent? Why or why not?

What does Amelia mean at 00:35 in the movie by "... with surrogacy, the growth becomes exponential"? Use math in your explanation for up to 3 additional points.

Who wrote the poem that the Professor Brand recites, "rage, rage, against the fading of the light. .."?

How does it pertain to Brand’s vision for the fate of humanity?

How do plan A and plan B differ? Why does plan A require a major accomplishment in theoretical physics?

Show that the speed of the Endurance in traveling to Jupiter (5 AU from the Sun) in two years was about 13 km per second.

How would a wormhole allow the Endurance to travel in a few minutes from Jupiter to a very distant region?

Show that the passage of time on the surface of Miller's Planet is 60,000 times slower than somewhere far from a blackhole, e.g., on the Earth.

Use information in chapter 22 to show that the Schwarzschild radius of Gargantua is 2 AU.

Why must Gargantua's spin differ by not more than 1 part in 100 trillion from the maximum spin rate for an extremal rotating black hole for Miller's Planet to have the required time dilation (hint, refer to the book by the film's Executive Producer, Kip Thorne, [The Science of Interstellar](#); and/or see <https://www.physicsforums.com/threads/equation-for-time-dilation-of-body-in-orbit-around-kerr-black-hole.781691/>)?

What does Cooper experience inside of the Gargantua blackhole?

Comment on the extent to which you find this movie to be realistic. Justify your conclusions citing incidents from the movie.

Comment on the extent to which you find this movie to be aesthetically appealing. Justify your conclusions citing incidents from the movie.