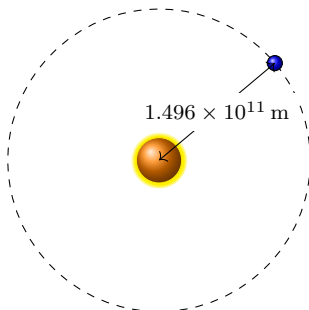


Circular #3

1. The earth ($m_E = 5.972 \times 10^{24}$ kg) is 1.496×10^{11} m away from the sun ($m_S = 1.989 \times 10^{30}$ kg).
- (a) Find the force of gravity between the earth and the sun.



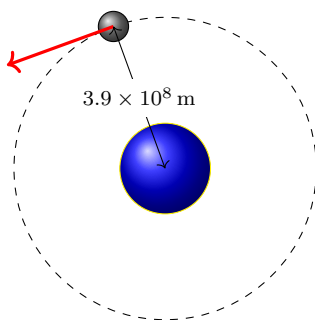
- (b) Find the tangential velocity of the earth. (*use your answer from part a*)
- (c) Find how long it takes for the earth to complete one rotation (*use your answer from part b*)
- (d) Your answer to part c is in seconds. Convert it to days. What do you notice?

Name: _____

Date: _____

Period: _____

2. The Moon ($m_M = 7.35 \times 10^{22}$ kg) is 3.9×10^8 m from the center of the Earth ($m_E = 5.972 \times 10^{24}$ kg).
- (a) Find the force of gravity between the Moon and the Earth.



- (b) Find the tangential velocity of the Moon.