Most science fiction stories often have spaceships with powerful, or exotic, rockets that can let space travelers visit the distant planets in less than a day's journey. The sad thing is that we are not quite there in the Real World. This is because our solar system is so vast, and our rockets can't produce quite enough speed to make journeys short.

NASA has been working on this problem for over 50 years and has come up with many possible solutions. Each one is more expensive than just using ordinary fuels and engines like the ones used on most rockets!

Problem 1 – The entire International Space Station orbits Earth at a speed of 28,000 kilometers per hour (17,000 mph). At this speed, how many days would it take to travel to the sun from Earth, located at a distance of 149 million kilometers?

Problem 2 – The planet Neptune is located 4.5 billion kilometers from Earth. How many years would it take a rocket traveling at the speed of the International Space Station to make this journey?

Problem 3 – The fastest unmanned spacecraft, Helios-2, traveled at a speed of 253,000 km/hr. In the table below, use proportional math to fill in the travel times from the sun to each planet traveling at the speed of Helios-2. Give your answers to the nearest tenth in appropriate units of days or years.

Planet	Distance in millions of kilometers	Time
Mercury	57	
Venus	108	
Earth	149	
Mars	228	
Jupiter	780	
Saturn	1437	
Uranus	2871	
Neptune	4530	

Problem 1 – The entire International Space Station orbits Earth at a speed of 28,000 kilometers per hour (17,000 mph). At this speed, how many days would it take to travel to the sun from Earth, located at a distance of 149 million kilometers?

Answer: Time = Distance/speed so
Time = 149,000,000 km/ 28,000
= 5321 hours or **222 days**.

Problem 2 – The planet Neptune is located 4.5 billion kilometers from Earth. How many years would it take a rocket traveling at the speed of the International Space Station to make this journey?

Answer: Time = 4,500,000,000 km / 28,000 km/h
= 160714 hours or   6696 days or **18.3 years**.

Problem 3 – The fastest unmanned spacecraft, Helios-2, traveled at a speed of 253,000 km/hr. In the table below, use proportional math to fill in the travel times from the sun to each planet traveling at the speed of Helios-2. Give your answers to the nearest tenth in appropriate units of days or years.

Planet	Distance in millions of kilometers	Time
Mercury	57	9.4 days
Venus	108	17.8 days
Earth	149	24.5 days
Mars	228	37.5 days
Jupiter	780	128.5 days
Saturn	1437	236.7 days
Uranus	2871	1.3 years
Neptune	4530	2.0 years