Harpal Chima 13A General Studies

"Science revolutions are usually followed by a huge increase in the number of inventions" Evaluate arguments for and against the statement in terms of revolutions you have studied

Over the past millennium there have been several significant scientific revolutions that have led to an increase in the amount of inventions within that field of science. Yet some scientific revolutions have been restricted to a containment of research within the field and thus meant that no inventions have occurred. Specific reasons for the increase in research are basically because new inventions can help the needs of humans, yet the argument against the increase of inventions is because some revolutions are not accepted or cannot be researched any further.

The argument can be supported with a significant amount of evidence that shows that the statement made is accurate. In 1854 John Snow discovered that the disease named Cholera spread the water supply of London which caused the spreading of the disease to occur, this was not only a great discovery but it sparked off a scientific revolution in the field of medicine. After Snow discovered the idea his ideas were rejected because people did not believe him and his work was largely ignored until Robert Koch supported Snow's argument and identified the cholera bacteria was within the water and food. This supports the statement and shows that one discovery sparked off another thus preventing loss of life.
Another argument that supports the statement is the discovery by Ignaz Semmelweis, Semmelweis discovered that diseases were contagious and that they could be transferred. He observed this by witnessing medical students dissecting bodies then immediately rushing to deliver babies that increased the chances of death for the doctor, lady and baby. He also supported his argument by watching his colleague cut himself during an autopsy and thus died from the identical symptoms to the autopsied. Although he sparked off a scientific revolution which saved human lives his theory was largely ignored as doctors found it hard to accept that they were killing there patients and that diseases were contagious and transferable. But eventually Semmelweis's ideas did create new inventions such as the Penicillin founded by Fleming, the discovery of soap by Marie Curie also supported the arguments that Semmelweis proposed. His revolution was seen as an inspiration to Florence Nightingale who became a hero during World War I for her life saving discoveries.
The scientific revolution that Francis Crick and James Watson set off is a clear example that if a scientific revolution occurs it will cause an increase in the amount of inventions. Crick and Watson discovered the structure of deoxyribonucleic acid (DNA) and recognized how two pairs of complementary bases would have identical shapes if held together by hydrogen bond. The find was seen as the discovery of the century and it meant that Crick and Watson had little difficulty for others to accept their discovery. The discovery sparked off many new inventions and industries, the find meant that Genetically Modified food could be made, cloning of humans and animals was accomplishable and it helped to create new medicines to save lives.

Although it can be said that there are a lot of argument that supports the statement but it must be taken into account that the statement can be argued against just as well as it can be supported for. Despite having a large amount of scientific revolutions throughout the reign of man it is not always followed by a large amount of inventions, clear examples that support this is the discoveries made by Charles Darwin, Nicolas Copernicus and Galileo Galilei.
In 1859 Charles Darwin introduced his theory of natural selection which took the world of their feet. The magnitude of his discovery was unrecognisable and the amount of criticism and problems that Darwin met before having his idea accepted was controversial. Darwin proposed that within each species there are individual members whose particular characteristics help them to survive better; those who survive long enough are able to bread and pass their characteristics to the next generation; thus the next generations chance of survival increase; hence the characteristics of a species are gradually modified in favour of those that facilitate survival. In illustrating his theory Darwin pointed out that people had been modified from animals, claiming that before humans were actually gorillas of some sort. The discovery was not accepted by most people because of the strong Christian belief that God had created man not that we were descendants of gorillas. After his discovery of natural selection there was no more support or other inventions that followed his discovery which contradicts the suggestion that scientific revolutions are

usually followed by a huge increase in the number of inventions. Not only were there no other inventions but also there were not even any other cracking discoveries to further support or contradict what Darwin proposed.
The ideas and theories that Galileo proposed were basically supported by the theories that Copernicus released before him. Copernicus was a Polish astronomer who in 1543 released within his book "On the Revolutions of the Heavenly Bodies" the theory that the Sun was the center of the Universe and not the Earth. He argued that the Earth was just another planet and the moon is in orbit around the earth, not the sun. The church challenged his ideas and they condemned his book as being false and unsupported. Galileo who lived a couple decades after the death of Copernicus supported the theories that Copernicus put forward. He came to a conclusion after through research of the universe that not only was Copernicus right but he had described the actual universe and not simply offered a useful alternative way of making calculations. The ideas put forward by both Copernicus and Galileo were seen as clear marks as scientific revolutions yet no inventions were the result of the revolutions. Yet it can be said that an inventions resulted into the scientific revolution, the invention being the telescope which was invented by De Gamma 2 centuries ago. This not only contradicts the statement but also flips the statement around and claims that an invention may led to a scientific revolution.

Overall in my opinion I do not support the idea that the puts forward. It is clear to see that the scientific revolutions that were begun by Copernicus, Galileo and Darwin did not create any invention what so ever, and they are seen as very highly ranked scientists. Although it can be argued that Crick & Watson, Semmelweis and Snow did trigger off the creation of inventions from there discoveries it can be said that there was not a large increase of inventions made but only a few. And the inventions are the result from a few scientific discoveries not just one. Thus it can be concluded that the statement is false and that scientific revolutions do not led to a large increase in inventions, but quite the opposite when considering the theories released by Copernicus and Galileo and the invention they used.