The Romans built roads so that the army could march from one place to another easily. They tried to build the roads as straight as possible, so that the army could take the shortest route through the empire.

1) At the bottom of the trench, the Romans put a big layer of stones.
2) Broken stones, pebbles, cement and sand to make a firm base.
3) Cement mixed with broken tiles
4) Paving stones formed the surface of the road. These were cut so they fitted together tightly
5) Kerb stones at the sides held in the paving stones and made a channel for the water to run away.

It is often said that "all roads lead to Rome," and in fact, they once did. The road system of the Ancient Romans was one of the greatest engineering accomplishments of its time, with over 50,000 miles of paved road radiating from their center at the miliarius aurem in the Forum in the city of Rome. Although the Roman road system was originally built to facilitate the movement of troops throughout the empire, it was inevitably used for other purposes by civilians then and now.
Romans excelled in the practical arts of building, perfecting their engineering skills as they built roads, bridges, and harbors throughout the empire. Roman roads were so solidly built that many of them remained in use long after Rome fell. In addition, three things that scientists were most interested in studying included public health, sanitation, and engineering.

Roman engineers built many immense aqueducts, or bridge-like stone structures that brought water from the hills into Roman cities. In Segovia, Spain, a Roman aqueduct still carries water along a stone channel supported by tiers of arches. The availability of fresh water was important to the Romans. Wealthy homes had water piped in, and almost every city boasted both female and male public baths. Here people gathered not only to wash themselves but also to hear the latest news and exchange gossip.

The Romans are perhaps the most famous aqueduct builders of the ancient era. In fact, the word "aqueduct" is derived from the Latin words *aqua* ("water") and *ducere* ("to lead"). Within a period of about 500 years, the Romans constructed eleven major aqueducts to supply Rome with water. The first Roman aqueduct, Aqua Appia, was built around 312 BCE. By the time the eleventh aqueduct, Aqua Alexandrina, was completed in 226 CE, Rome was being watered by 359 miles of aqueducts and was receiving about 50 million gallons of water each day. In addition to building aqueducts for Rome, the Romans also build aqueducts for regions throughout their empire, including France, Spain, and Northern Africa. Remains of most of these aqueducts still exist, and a few such as the one in Segovia, Spain, are still in use.
Caligula (37-41 CE)

After Tiberius dies in Capri, Gaius Caesar is named emperor. 'Caligula', more properly Gaius (Gaius Julius Caesar Germanicus), was the third Roman emperor. He is remembered in history as one of Rome’s worst emperors. Caligula was the son of a popular Roman general, who was killed by the emperor Tiberius. He got his name Caligula (“little boots” in Latin) from his father’s soldiers. Caligula grew up with Tiberius at his palace on the island of Capri, and took power after Tiberius’ death (Caligula may have helped kill him by smothering him with a pillow).

The 24-year-old emperor was at first very popular. He provided exciting, generous games for the Romans to enjoy, and got rid of some taxes. The army liked him because he was the son of a general. He got sick early in his rule, and once he was healthy again, he acted very cruelly toward his people and the Senate. To embarrass the Senate, he made his horse a senator. He also insisted on being treated as a god.

At home in Rome, Caligula abused the wives of Roman senators, and had many people executed, including the families of some of his guards. He had his elderly uncle thrown in a river in February to “see if he could swim.” In 39-40 AD, Caligula sent his armies to fight in Germany, but they did not gain any land. He also sent troops to fight in England, but they did not make it there, and instead of fighting he told them to gather seashells along the English Channel. He had parades and celebrations to show off his “victories.” These actions were expensive and a waste of time, and made the army and the Praetorian Guard start to hate him.

By the year 41, Caligula had made too many enemies and the Praetorian Guard killed him, along with his wife and the rest of his family, because they did not want anyone to be able to follow him on the throne, or to get in trouble for their actions. They put his uncle Claudius on the throne after him, and he ruled for 13 years.
Nero (54-68 CE)
Nero came to power through the pressure of his mother, who bore over him throughout his life. He eventually had her killed, which caused him to be unpopular with the people. He offered the people bread and created public baths, which stopped some of the outcry.

The Great Fire of Rome began on July 18 and lasted for six days and seven nights. Of Rome's 14 districts only four remain untouched. Rumors circulated that Nero had been singing and dancing while Rome burned. In order to divert attention away from himself, Nero blamed the Christians. He ordered some to be thrown to the lions; many others are crucified. Nero discovered that many people were conspiring to kill him, and he lashed out. The poets Lucan, Seneca and the novelist Petronius are among those who lost their lives in the purge that follows. Increasingly alone and paranoid, Nero kicks his wife Poppaea to death while she is pregnant and ill. Reportedly, this is for complaining that he came home late from the races. Support for Nero dwindled and he is declared a public enemy by the Senate, meaning anyone can kill him without being punished. Terrified, and abandoned by everyone, except a few of his slaves, Nero flees to the country. There he commits suicide, ending the dynasty of Augustus. His last words were, "Qualis artifex pereo." ("What an artist the world loses in me.")

Trajan (98-117 CE)
Trajan came from Spain and was the first non-Roman to be emperor. He was a great general, and increased the territory of the Roman Empire. Trajan was a soldier at heart, happiest when he was out with his army. He brought more territory under Rome’s control, in places like Persia, Mesopotamia, and Britain, and kept the army well organized. He was emperor during the Second Jewish War, which caused the Jews to be removed almost completely from their homeland and scattered across the Empire—the famous Diaspora. The Roman Empire never covered more territory than it did under Trajan.

This was also the Silver Age of Roman literature, with the most famous writers being Pliny the Younger and the historian Tacitus. A record of Trajan’s many accomplishments was recorded on a column, with the history of his feats winding around it from top to bottom. This is Trajan’s Column, which can still be seen in Rome. He was in charge during many important building programs, including an expansion of the Forum that is named after him, reconstruction of the Circus Maximus to a size that could hold 200,000 people, and the building of an entire new harbor at Ostia (Rome’s port town).

Trajan had few enemies in his empire, so unlike many other emperors who were murdered, he died of old age. Trajan ruled for many years and expanded the empire more than any man since Tiberius. Perhaps as important as any other accomplishment, he was a good judge of character and chose his successor wisely: Hadrian.
Hadrian (117-138 CE)
A cultured scholar, fond of all things Greek, Hadrian travelled all over the empire. He was attentive to the army and the provincials, and left behind him spectacular buildings such as the Pantheon in Rome and his villa at Tivoli. But his greatest legacy to the empire was his establishment of its frontiers, marking a halt to imperial expansion. In Africa he built walls to control the transhumance routes, and in Germany he built a palisade with watch towers and small forts to delineate Roman-controlled territory. In Britain, he built the stone wall which bears his name, perhaps the most enduring of his frontier lines. He was truly a pivotal emperor, in that he divided what was Roman from what was not. Apart from minor adjustments, no succeeding emperor reversed his policies.

Marcus Aurelius (161-180 CE)
Marcus Aurelius was a clever emperor who was interested in new ideas and in philosophy. He thought all people were basically the same, in a world that is basically good. Unfortunately, as emperor, his main problems were to defend the empire’s borders against attacks, and deal with his son, Commodus, who was not a good person at all. Commodus’s idea of a good time was to dress up like a gladiator and kill people for fun.

Marcus Aurelius is the last of the “Good Emperors” and the last emperor of the Pax Romana. Marcus Aurelius ruled at the same time as another emperor, because the previous emperor named two people to follow him. Marcus Aurelius had to fight to control Rome’s territory in the east in Parthia. He and his co-emperor had a strong army, but many of the soldiers got sick from a plague when they were away from Rome. They brought the disease back to Rome and it spread all over the peninsula. Invaders attacked Rome when it was weak from plague, but Rome was able to defeat them.

Marcus Aurelius became the only emperor in 169 AD (CE). He did not make many big changes to Rome when he was in charge, but he did encourage people to study the law. He thought it was important to understand Rome’s laws and make sure they were fair. He also let people who the Romans saw as barbarians live in the empire. Marcus Aurelius led many military expeditions, and these cost a lot of Rome’s money. He spent nearly all of Rome’s money on the army, but he was not the only emperor to do that.

Marcus Aurelius is known as being a philosopher-emperor. His “Meditations,” a book of philosophy he wrote, are still reproduced and read today. His writings were personal—he never intended that they be published—and they reveal a man both sensitive and determined. The Meditations is easy to read because it is nothing more than a collection of short thoughts. One of Marcus Aurelius’ meditations from his book was: “human beings exist for each other; either improve them, or put up with them!”