

Goodnight Stories

for

Builders and

Architects to be...

Stories and Trigonometry Problems by
10Tahi3A 2019

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The Shard

Once upon a time there was a big skyscraper. It rose 95 stories above the ground. Everyone called it the shard, it was an amazing building that all the people in London stopped to stare at.

Inside it held three hundred and six flights of stairs, forty four lifts and seventy two floors. Everyone thought this building was special. Which it was it was designed by a famous italian architect whose name was Renzo Piano.

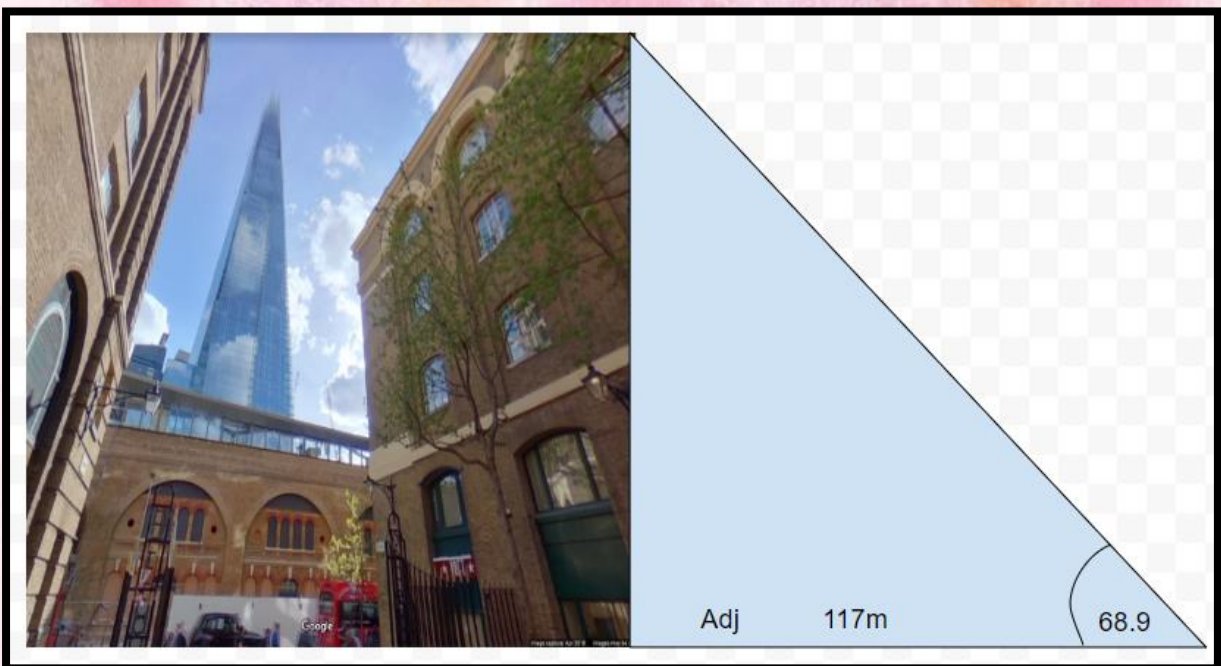
But their was one problem the Shard itself wasn't happy. Even though 2,372,500 people visit the shards restaurants a year and 4,500 people worked there it was built so much taller than any of the other building in London that it was always left out. The other building wanted nothing to do with the shard. It got all of the attention because not only was it amazing to look at inside on the the 53rd to 65th floor it had 360 degree views. On the 31st to 33rd it held international restaurants and on the 34th to 52nd floor it has the Shangri-La Hotel and Spa, with 200 luxury rooms.

Something had to be done. One day when people were admiring the shards 11,000 glass panels the shard realized that it didn't need all of the other building to like it. Because it was unique and every person to walk past it would stare at it in awe. So from then on the shard didn't care about what the other buildings thought and was happy with the building that it was.

The Shard is proud to be known for being the tallest building in the United Kingdom. It stands 309.7 meters off the ground towering all of the other buildings below it. It was given its name the shard because not only was it modeled to look like a shard of glass it also has enough glass panels to cover the total area of 56,000 square metres. The Shard is proud to be such a magnificent building.



If you stand 117 meters away from the Shard on vivat Bacchus street; looking up at an angle of 68.90 degrees, how tall is is the shard?



The Taj Mahal

Long, long ago in India, there lived a man and a woman named Prince Salim and Princess Jagat Gosaini. When the princess fell pregnant she was visited by an old soothsayer who told her that her unborn son was destined for greatness, she was right, he went on to be one of the greatest Mughal emperors in history.

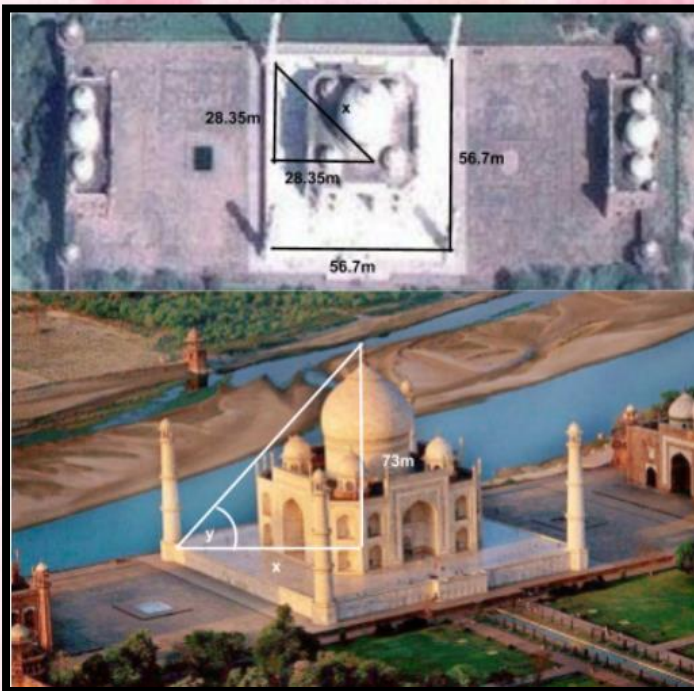
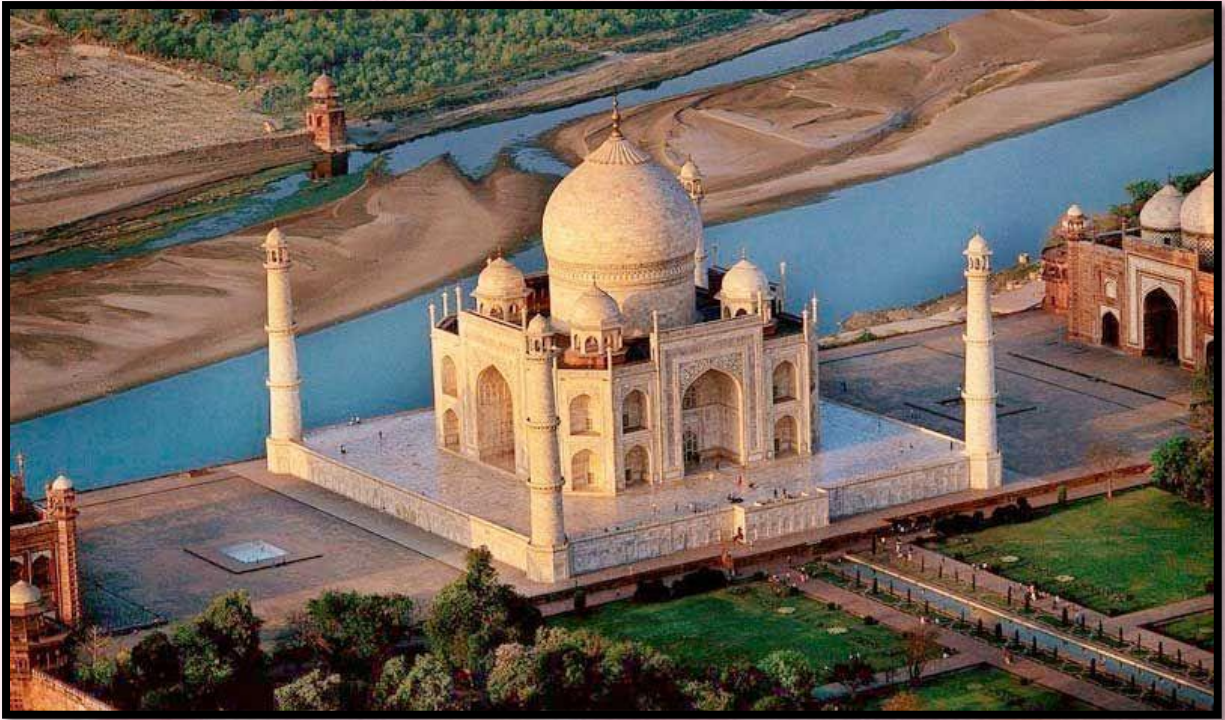
Because of this prediction, their son Shah Jahan was raised to be the an Emperor despite the fact he was not the first born. When he was only fifteen, he became engaged to Arjumand Bano Begum, a girl he had known since childhood. While Shah Jahan had other wives, everyone knew how much he loved Mumtaz Mahal 'The Jewel of the Palace' as she was christened when they married. She held a remarkable amount of power as the Emperor's most trusted advisor and they lived a happy life together.

Unfortunately there was not a happy ending to this story. One day Mumtaz Mahal went into labour, giving birth to their 14th child. She was in such horrible pain for thirty hours, it is said that her daughter was so distraught that she started giving out gems to the poor, hoping God would intervene and help her mother. The child lived, but Mumtaz Mahal could not be saved. She passed away, taking Shah Jahan's heart with her.

The Emperor was heart broken, he would often break down and weep, paralysed with grief and unable to function for a long time. Eventually he decided to build the Taj Mahal for his wife as a final resting place. The structure took 20 years, 1,000 elephants and 20,000 people to build. It was constructed using magnificent white marble and placed in the middle of a vast garden on the bank of the Yamuna River in Agra. Many years later when Shah Jahan passed away, he was laid to rest beside his wife.

The Taj Mahal has managed to survive through history practically unscathed and is still just as beautiful as it was at its construction. It is surrounded by buildings, gardens, lakes and fountains all of which have perfect symmetry. It includes two mosques, three Iranian-style gates, three red brick buildings, a central fountain and four bodies of water organized in a cross. Every year, over four million people visit the Taj Mahal to witness the breathtaking beauty that has existed for thousands of years untouched by the outside world. The Indian government has gone to great lengths to protect the Taj Mahal, forbidding anyone to drive within 500 metres of it so the exhaust won't tarnish the building and during wars it was covered with scaffolding so planes wouldn't think to bomb it.

Nowadays it is one of the oldest, most beautiful and most well-known structures in the world, but perhaps the reason for its beauty lies not in the building itself, but in the reasons behind its creation. It is best described by English poet Sir Edwin Arnold who says it is "Not a piece of architecture, as other buildings are, but the proud passion of an emperor's love wrought in living stones."



Use your Pythagoras and trigonometry skills to calculate y , the angle of elevation from the base corner to the top of the Taj Mahal.

Buckingham Palace

Buckingham palace is home to the Queen of England and is one of the most famous buildings in London.

The Buckingham palace was originally built in 1703 England, It was built and designed by John Nash, Edward Blore, Aston Webb, William Winde and Thomas Cubitt, It became a royal residence when King George III purchased it in 1761 as a comfortable family home for his wife, Queen Charlotte. The Purpose for the building was for the British royal family. The enormous building and the gardens are an important site of political affairs in the United Kingdom.

History:

Indeed, for more than 300 years, from 1531 until 1837, the King of England's official residence in the capital city was St. James' Palace. Located about a quarter of a mile from Buckingham Palace, St. James' still stands, and remains the home of several members of the royal family. (It, like Buckingham Palace, is also open to tourists.

In 2010, 29.627 million people visited the Palace. Because the Queen England. It is the royal palace of Britain and the queen of England lives there. Today, Buckingham Palace is very much a working building and serving as the venue for many royal events and ceremonies from entertaining foreign Head of States to celebrating achievement at Investitures and receptions. More than 50,000 people visit the Palace each year as guests to State banquets, lunches, dinners, receptions and Garden Parties. Her Majesty also holds weekly audiences with the Prime Minister and receives newly-appointed foreign Ambassadors at Buckingham Palace



Use your trigonometry skills to calculate y , the angle of elevation from the base corner to the top of Buckingham Palace.



Himeji Castle

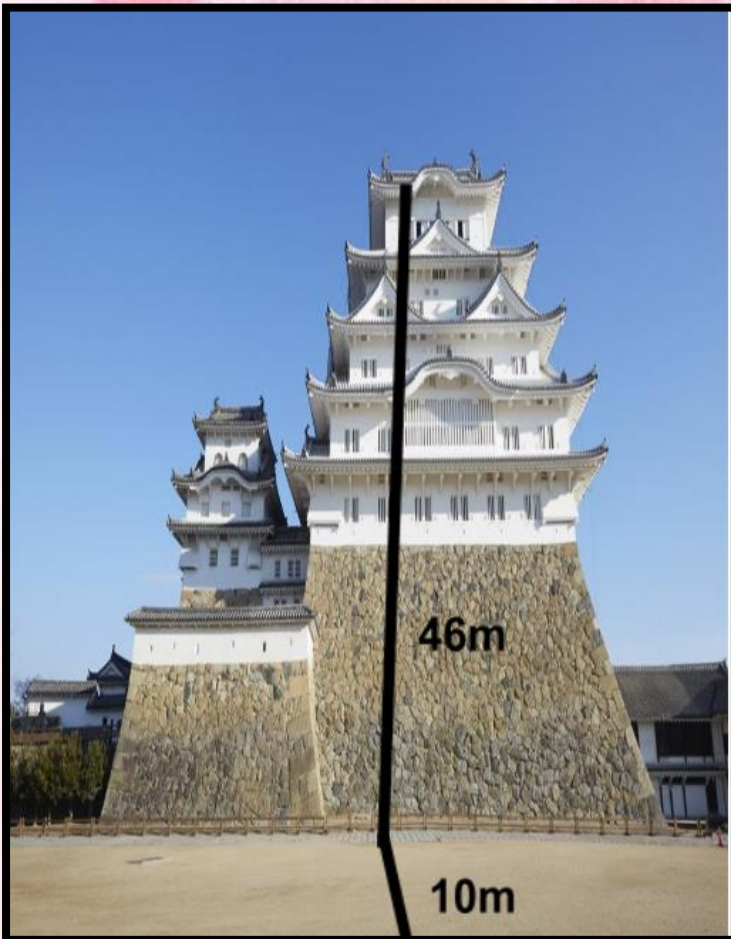
Once upon a time there was beautiful hill in Japan. It was called Himeyama Hill. It was a very tall hill. As tall and as high as the birds flew. 45 metres to be exact. One Day in the year 1333, a Japanese Samurai named Akamatsu Norimura decided to build himself a fort on top of that hill so he could protect and control the region.

Little did he know in less than 3 centuries his little hut on the hill would become a resting place for a beautiful castle! 13 years after the fort was built, it was completely dismantled and turned into a little castle by his son, Akamatsu Sadonori for his clan to protect the province. 200 years later a little man named Toyotomi Hideyoshi, decided he wanted an even bigger castle! He built rooms onto the little structure, adding 3 more stories. Then there was a terrible war. Luckily Toyotomi made it through the battle, but could not have done it without his friend Ikeda Terumasa. So he gifted the castle to him as a sign of gratitude and thankfulness. What started out as a little fort, had now become the amazing Himeji Castle.

By now the castle was towering and luminous. It was a magnificent sight. It had glowing white walls 26 metres high, covered 570 acres of land and had a perimeter of 4.2 kilometres. The castle was designed so elegantly. So perfectly. It had every room imaginable. 83 and counting. It had moats and mazes. Traps and lookouts. It looked like something straight out of a fairytale.

To this day Himeji Castle still remains unharmed. For 600 years this beauty has stood. Even after countless wars, bombings, earthquakes and typhoons. The castle is perfectly made. It is strong and firm yet delicate and exquisite. The castle gets nearly 10 000 visitors a day, all just wanting a glimpse at what is the 3rd top ranking castle in Japan. People come from all over the globe to see this jaw dropping, breathtaking structure.

It truly is a wonderful piece of art with an intriguing history of how its beauty came to be.



If I am standing 10m away from the building and the building is 46m high. What is the angle of elevation to the top of the building?

