**Kingdom of Montarek**

One day in the ancient kingdom of Montarek, a peasant saved the life of the king’s daughter. The king was so grateful he told the peasant she could have any reward she desired. The peasant, the kingdom’s chess champion, made an unusual request:

**Plan 1 – The peasant’s plan**

“I would like you to place 1 ruba on the first square of my chessboard, 2 rubas on the second square, 4 on the third square, 8 on the fourth square, and so on. Continue this pattern until you have covered all 64 squares. Each square should have twicce as many rubas as the previous square.”

The king replied, “Rubas are the least valuable coin in the kingdom. Surely you can think of a better reward.” But the peasant insisted, so the king agreed to her request.

The queen on hearing what the king agreed to told him that the would be more money than was in the whole kingdom. She told the king to get the peasant to agree to a different plan.

**Plan 2 – The King’s plan**

After much thought, the king came up with plan 2. He would make the new board with only 16 squares. He would place 1 ruba on the first square, 3 rubas on the second square and 9 rubas on the third square. He would continue this pattern until all 16 squares were filled.

**Plan 3 – The Queen’s plan**

The queen wasn’t convinced about the king’s new plan, so she devised a third plan. Under plan 3, the king would make a board with 12 squares. He would plan 1 ruba on the first square, 4 on the second square, 16 on the third square and so on until all 12 squares were filled.

**Plan 4 – The peasants counter offer**

The peasant countered the queens offer. The peasant said “I would like your to place 27 rubas on the first square, 81 rubas on the second square, 243 on the third square and so on, until you have covered all 12 squares.

**Plan 5 – The royal advisors plan**

The advisors proposed a fifth plan. Under plan 5, the king would put 50,000 rubas on the first square, 100,000 rubas on the second square, 150,000 rubas on the third square, and so on. He would increase the number of rubas by 50,000 for each square until all 64 squares would be covered.

**Task – For each of the plans above you need to:**

* Complete the table of values through 10 squares
* Determine the number of rubas on the final square of each plan
* Write an equation to match each plan
* Graph all five plans on the same coordinate grid through the first 10 squares
* Answer the reflection questions