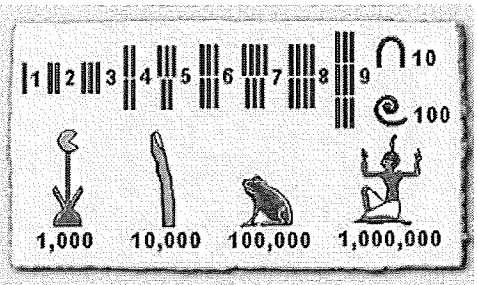
Name _____

Egyptian Math Project

Hieroglyphic Numbers

The Egyptians had a decimal system using seven different symbols.

- **1 is shown by a single stroke.**
- **10 is shown by a drawing of a hobble for cattle.**
- **100 is represented by a coil of rope.**
- **1,000 a drawing of a lotus plant.**
- **10,000 is represented by a finger.**
- **100,000 a tadpole or frog**
- **1,000,000 figure of a god with arms raised above his head.**



Hieroglyphic Numbers

Please use the table above to reference the Egyptian Hieroglyphic Numbers. In an effort to gain appreciation for the number system we use, you are to show all of your final answers using hieroglyphics. (You may do your work using our number system!)

I will check your answers 1 time before you submit them for grading. Use this check wisely!

Date checked on _____

While I do not expect you to be an artist, your numbers must be neat enough that I can read them correctly.

Project Due Date:

Name.....

These questions are intended to help illustrate the benefit of using algebra. Parts 'a' to 'd' may be solved intuitively, or algebraically; but part 'e' may only be [easily] solved using algebra.

Problem A

A man borrows  donkeys to use for transporting goods.

To re-pay the loan the man must give the lender  deben of copper every month per donkey.

The man uses each donkey for  days per month for transporting goods and earns  deben of copper per donkey per day for this work.

How many deben of copper does the man make per month?

Problem B

The donkeys take some looking after, though.

The man has to spend  deben of copper per donkey per day for feed.

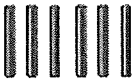
When the donkeys are working they need twice as much feed as they do when they're resting.

How much does the man have to spend per month to keep the donkeys?

(There were  days in the ancient Egyptian month and the donkeys are working as described in part [a])

Problem C

Occasionally the man has to get the donkey doctor to visit if the donkeys get sick.

Over a five-month period the donkey doctor has to visit  times the first month,  in the second,  times in the third,  times the fourth and  in the fifth month.

What is the average number of visits the donkey doctor makes per month?

Problem D

The donkey doctor charges  deben of copper per visit.

Taking into account the amount the man must spend on the loan (part 'a') and the feed (part 'b'), and the amount that the man makes from hiring out the donkeys (part 'a'),

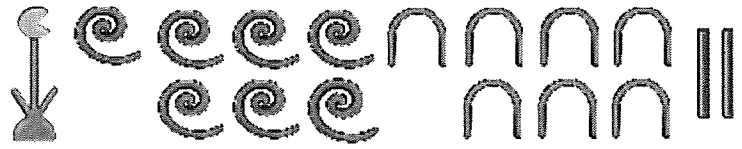
How much does the man get to keep each month?

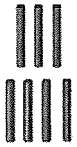
Problem E

If the man needs to earn at least  deben of copper per month to support his family then what is the minimum number of whole days he needs each donkey to work to make enough money?

(assume the donkey doctor makes the same number of visits per month)

Problem 1

If  pyramids have  bricks.

how many bricks are needed to build  pyramids?

Problem 2

If  bucket of food feeds  camels for  days

how many buckets are needed to feed  camels for  day?

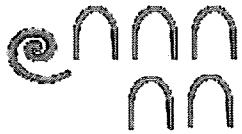
Problem 3

The kings of Megiddo and Kadesh are preparing to invade Egypt. But pharaoh Thutmose III has decided to cross the Sinai desert and attack his enemies before they are ready.

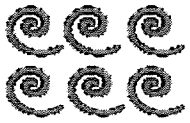
He is taking  men with him. It takes him  days to cross

the desert and each man needs litres of water per day - how much water will he need to take?

Problem 4

Before Thuthmose and his army reach Aaruna, at the foot of the hills in which Meggiddo stands, he is going to send  men to reconnoitre a narrow pass. The expedition is expected to last  days. They are using camels to carry their food and water. Each person needs  kilogram of food and  litres of water per day, and each camel needs  kilograms of food per day (they don't need anything to drink because they're camels, and camels don't get thirsty very often). If each camel can carry  kilograms and the rest of the expedition equipment weighs  kilograms. How many camels are needed to carry the water, food and equipment (The density of water in ancient Egypt was kilogram per litre)?

Problem 1

Queen Hatshepsut has ordered her Nubian general, Nehsi, to sail to the Land of Punt and obtain  planks of the finest cut cedar wood for the gates and doors of her new temple. Each ship can carry  planks of wood so how many ships will Nehsi have to take with him to transport all the wood back to Egypt?

Problem 2

There  are chariot regiments in king Thutmose III's army; on average each regiment will need  new replacement wheels each week. How many wheels must the wheelwright make every week to supply all the king's chariot regiments?

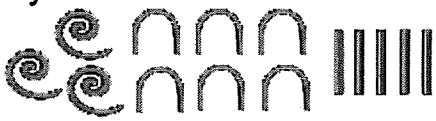
Problem 3

Thutmose III is on campaign against the rebel princes in Syria. After the battle of Megiddo the rebels are beaten and the king captures  bars of gold from the defeated city.

On his way home he is also given another  bars of gold as tribute from his loyal subject kings..... So how many bars of gold does the king take back to Egypt?

Problem 4

To give orders and send messages King Amunhotep II uses  sheets of papyrus a day.

The Egyptians had a  day year so how many sheets of papyrus will the king need to run the country for a year?

Problem 5

Rameses IV has ordered the master builder to fix the broken paws of the great sphinx. On seeing the damage the master builder orders  blocks of stone from the head quarry man to be delivered by the next day. It takes  men to drag  block of stone to the building site in a day and each man will need  jar of beer to drink on the way because it is thirsty work. Therefore, if the head quarry man is to move the  blocks of stone, how many jars of beer must he order from the brewer?

Problem 6

Tutankhamun has reopened 𓏺𓏺𓏺𓏺𓏺𓏺𓏺 temples to the god Amun and each temple needs to be staffed by 𓋴𓋴𓋴𓏺𓏺 priests. All these people must have sandals made from papyrus because it is an offence to the god if they walk within the temple sanctuary barefoot or in leather sandals.

The sandal maker needs 𓏺𓏺𓏺 papyrus plants to make 𓏺 sandal.

Therefore, how many plants will he need to cut to make all the sandals for the temples?