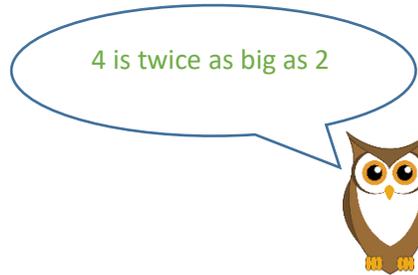


Beginners Circle, Home Problems 22

NAME \_\_\_\_\_

- Write down a 3-digit number: if you write left to right, each digit must be twice as big as the one before it. Now do the same, if each digit must be three times as big as the one before it.



- Four wizards, Draco, Eli, Tamerlan, and Ryua, found a diamond, a ruby, a topaz, and an emerald.

- No wizards's name starts with the same letter as their stone.
- Draco is taller than the ruby owner.
- Ryua is at odds with both the wizard who found the topaz and Eli.
- Tamerlan's stone is neither red, nor green.

	Draco	Eli	Tamerlan	Ryua
Ruby 				
Emerald 				
Diamond 				
Topaz 				

Who has which stone?

- Dr. Catz has lots of dogs and cats, 21 of them altogether. He noticed that if only he had 9 more dogs then he would have had the same number of dogs and cats. How many dogs does Dr. Catz have now?



- A frog and a toad are jumping along the row of lily pads starting from two ends of the row. The frog jumped on the 5<sup>th</sup> lily pad from one end. The toad is on the 8<sup>th</sup> lily pad from the other end. Now they are sitting on the lily pads that are next to each other! How many lily pads are there in total?



5. A dog, a cat, a pirate, a parrot, and a mouse went for a boat trip. They sat on the boat one after another: one can see only those who sit in front of them.



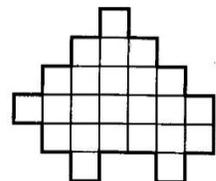
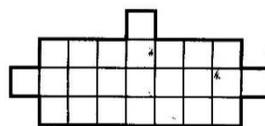
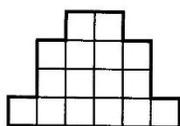
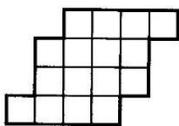
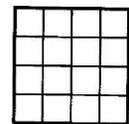
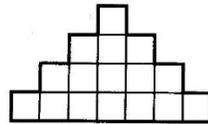
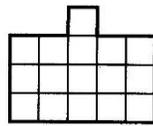
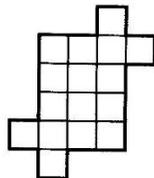
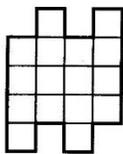
- A mouse can see the cat.
- There is one animal in front of the pirate.
- The dog and the cat are next to each other.

Can you figure out how they are sitting on the boat?

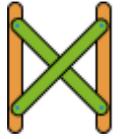
6. Kuzma has four pictures of mice. He wants to color two mice grey and two mice orange. How many ways are there for him to color the mice? You might want to make a list.



7. Divide each shape into these tetromino pieces .



8. Luba is building a fence. She put two poles next to each other and adds two planks in between, as shown on the picture.



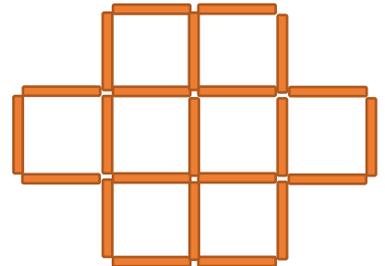
How many planks will Luba need for 4 poles?

How many planks will Luba need for 7 poles?

How many planks will Luba need for 10 poles?

9. Make this picture out of sticks of the same length.

a. How many squares are there on the picture?



b. Now remove 4 sticks so that there are exactly 5 squares on the picture.

10. A ribbon is 100 inches long and is colored yellow, red, and green, as shown. The yellow part is 40 inches. The red and green parts are the same length. How long is the part of the ribbon that is NOT green?

