Something Fishy

The students at Highland Middle School are designing a schoolyard garden, to include a small pond. They have decided that they will build their pond to hold 1000 gallons of water. They have also selected two types of fish to occupy their pond: goldfish and koi. The students want to have an equal number of goldfish and koi.

Goldfish can grow up to 12 inches in length, while a koi can reach a length of 24 inches. Both types of fish require two gallons of water per inch of fish length.

Question: What is the maximum number of each breed they can purchase, making sure they have enough space in the water for each fish?

EXTRA: They decide to make the pond 4 feet deep to discourage racoons from eating the fish. Find the approximate area of the pond's surface. (There about about 7.5 US gallons of water in a cubic foot.)