AGS 1 Name: _____ Period: _____ Date: _____

Notes 6.6 – Solving Systems

Lesson

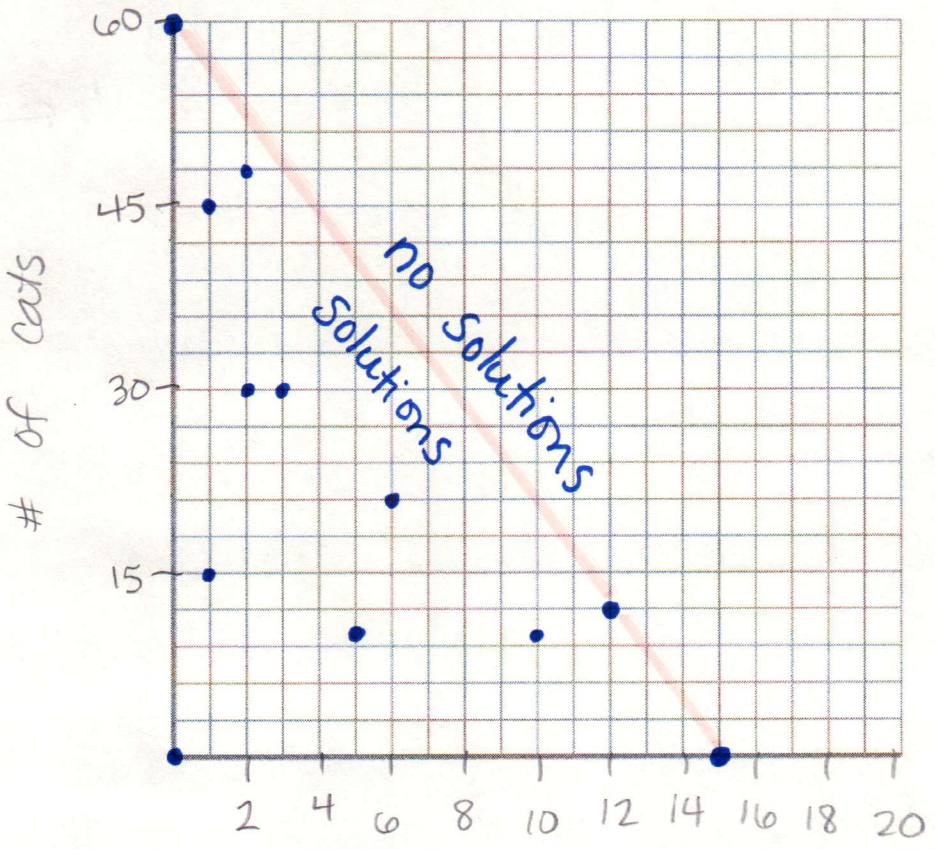
Carlos and Clarita have decided to add pet sitting to their pet supply business. They have decided to convert the building behind their house into a place to care for pets while their owners are away. They must decide how to divide the space between dog kennels and cat pens.

Scenario 1: Cat pens will require 6 square feet of space, while dog runs require 24 square feet of space. The building has up to 360 square feet of space that can be used for dog runs and cat pens.

Create a table that shows as many different combinations of the number of cat pens or dog runs they could choose. Then put them on the graph (label and scale!).

Table:

dogs	cats
15	0
0	60
5	10
12	12
6	21
1	45
0	0
2	48
3	30
2	30
1	15
10	10



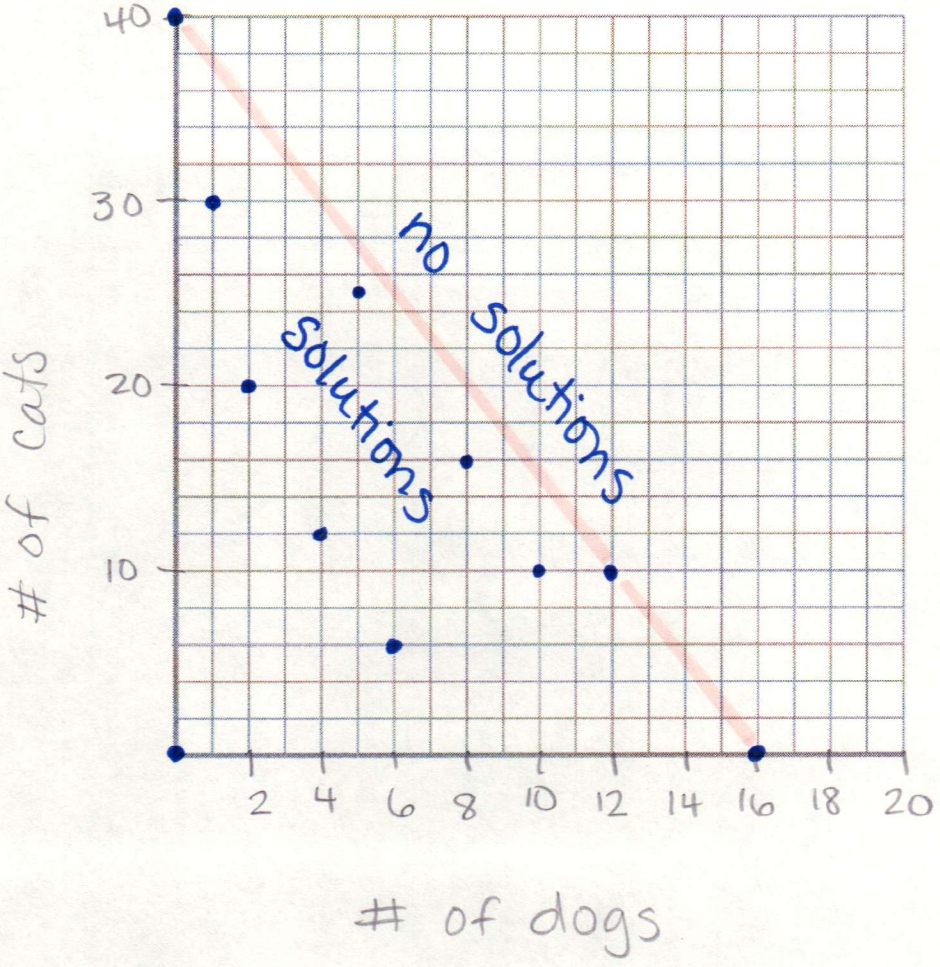
Notice that all solutions are are more in the lower left part of the graph

Scenario 2: They have determined that they have $1280 dollars to spend preparing the building to hold pets. They have learned that each dog run will cost $80 and each cat pen will cost $32.

Create a table that shows as many different combinations of the number of cat pens or dog runs they could choose. Then put them on the graph (label and scale!).

Table:

dogs	cats
16	0
0	40
12	10
2	20
4	12
1	30
0	0
6	6
8	16
10	10
5	25



They have determined they can charge $8 per day for cats and $20 per day for dogs, using the information from the two scenarios, give a recommendation for how many dog runs and how many cat pens they should put in the building. Explain your recommendation using the tables/graphs you created.

Data is used to make decisions, it also depends on the goal. Always back up your recommendation with reasons and mathematically show that it works.