Spy: We have gotten past the front doors and made it to the front door.

How many lasers are there sir? Also, do they come in pairs?

Voice/intercom: they come in pairs of two and there are 16 sets. These are invisible to the eye. you can see where they are by their entry and exit points.

I think we will graph the meeting points to see where they meet so you know what spot to avoid and figure out where you can get through.

Spy: I am going to use the floor and walls to create graphing coordinates.

Intercom: we now know the x and y intercepts are we will work backward from there to see where they meet. There aren’t any moving lasers just perpendicular intersections.

The first set is

The second Set is

The third set is

SIXTEEN SETS LATER….

We got through the lasers sir, we even found the safe

AT THE SAFE….

How many jewels are there sir?

intercom: THERE IS 16 jewels total. Some are worth $6,000 and other are worth $8,000. We heard there was a total of $120,000 worth in there

we will figure out how many are in there because the $6,000 ones weigh 2 lBS and the $8,000 ones weigh 5 LBS. You will want to know how heavy they are so you can lug them to the back door in time.

BACK AT THE OFFICE….

BOSS: COREYI NEED YOU TO FIGURE OUT THIS PROBLEM. WE NEED TO KNOW HOW MANY OF EACH BECAUSE OUR GUY WILL HAVE TO PACK THEM TO A DOOR 19 FEET AWAY FROM THE SAFE AND WE MIGHT HAVE TO SEND BACKUP IF IT IS OVER 30 LBS.

COREY: I will make the $6,000 jewels be x and the $8,000 jewels be y. we know that x + y = 16 and that 8x + 6y = 120.

To solve this can graph and see where the two lines meet. In this case, SUBSTITUTION will probably be easiEST. We will turn x = y = 16 into y = -x + 16. We will then plug it into the other equation to look like this 8x + 6(-x + 16) = 120.

We have to distribute and the equation will look like this 8x -6x + 96 = 120. We will subtract the 96 and combine x’s to get this 2x = 24.

We will then get the x alone by dividing by 2 to both sides to get x = 12. We plug the x back into x + y = 16 like this 12 + y = 16. We will subtract the 12 from 16 to get y = 4.

I will check my work with desmos and the answer is (12, 4). THAT MEANS WE HAVE 12 $6,000 JEWELS AND 4 $8,000 JEWELS.

NOW WE HAVE TO FIND HOW HEAVY THEY ARE. WE KNOW THAT THE $6,00O JEWELS WEIGH 2 LBS AN THE $8,000 JEWELS WEIGH 5 LBS. I will use the equation 2x + 5y = ? to find the weight using our points. 2(4) + 5(12) = 8 + 60 = 68 LBS

5 MIN HAVE PASSED WHILE COREY HAS BEEN FIGURING OUT THE MATH PROBLEM….

Corey to boss: Sir here are the figures sir. We will need to get a backup team in there. Have him unlock the door and so we can send two of our guys in there. we can clear the area in 10 min and get them out in the choppers.

Intercom: get to the back door and let our two other guys in there to help you get everything out and meet at the choppers. Remember the passcode is systems.