

Math Mystery: The Case of the Dual Jewel

Last night, someone broke into the museum of ancient science and stole a precious jewel discovered from prehistoric times! It was worth \$5,000,000! The criminal replaced the real jewel with an artificial one thinking they could fool the police!

As the police collect evidence from the crime scene, they have hired you, the top investigator to identify the real culprit!

The police found pictures of the jewel being stolen from the museum! Unfortunately, the security camera taking the pictures malfunctioned and the pictures are incomplete.

After reviewing the footage, it looks like there is a pattern to the malfunction. As our experts, you will need to use the pattern to find the time the jewel was stolen!

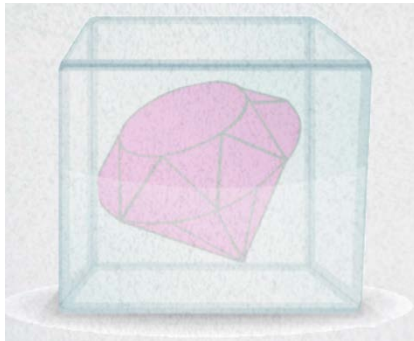
Materials:

- Scrap paper
- Pencil

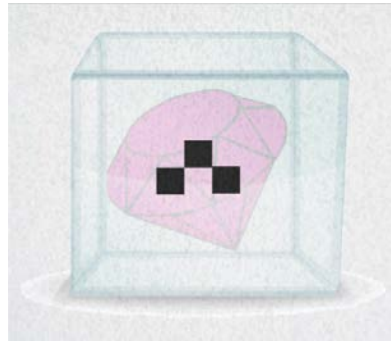
Investigation:

Let's take a look at the footage!

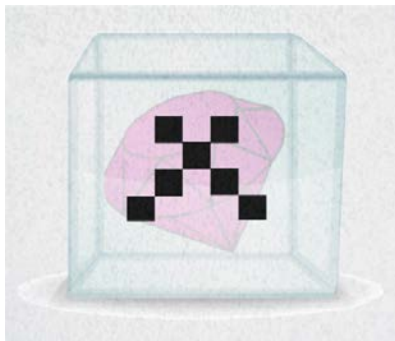
At 12 PM the gem looked like this:



At 1 PM the gem looked like this:



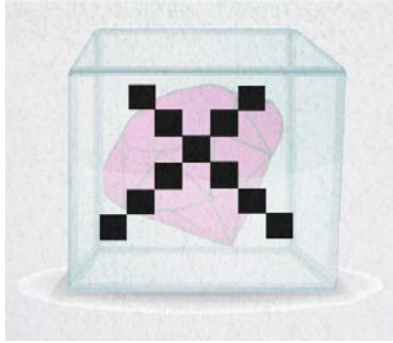
At 3 PM the gem looked like this:



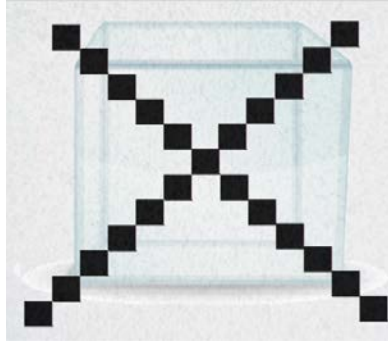
At 4 PM the gem looked like this:



At 5 PM the gem looked like this:



At an unknown time the gem was gone!



Let's look at this more closely, fill out the chart:

Time	Boxes
12 PM	
1 PM	
3 PM	
4 PM	
5 PM	
?	23

Time to ask some questions:

Do we have the information for every hour, or are we missing some?

How many boxes did we start with? _____

How many boxes were added between 3 PM to 4 PM? _____

How many boxes were added between 4 PM to 5 PM? _____

What is our pattern rule?

Start at ____ boxes, add/subtract/multiply/divide (circle one) ____ boxes every hour.



Now that we know the rule let's find out when the gem was stolen! When do we have 23 boxes?

Time	Boxes
12 PM	
1 PM	
2 PM	
3 PM	
4 PM	
5 PM	

What time was the gem stolen? _____

Thanks to your investigation the police now know when the gem was stolen, they can figure out who was working during the theft and really start the investigation, thanks for your help!

