



## Bell Ringer

October 3, 2011

Agatha dashes into a police station and cries, "Help! Someone has murdered my friend Christie! I was walking by her house when suddenly I sensed that something terrible had happened. I went to a first-floor window and wiped away the frost so I could look inside.

Sure enough, Christie was lying dead on the floor!"

The police immediately arrest Agatha on suspicion of murder. Why?

Answer

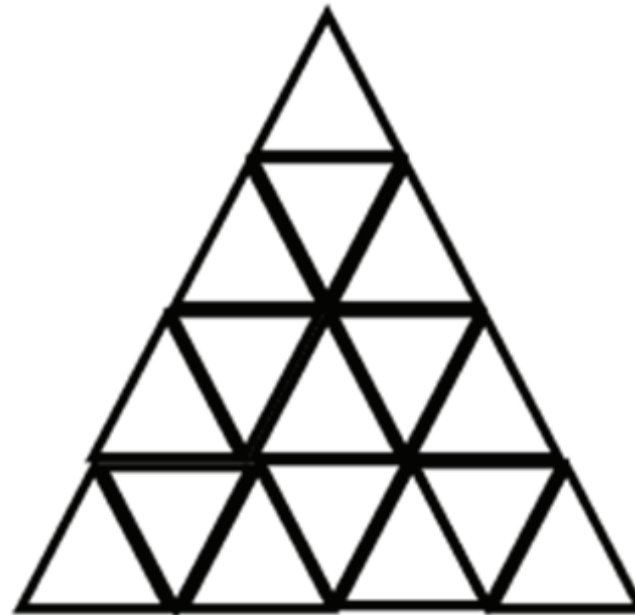
Her story is not true.  
Frost forms on the inside  
of the glass, not the  
outside.



# Bell Ringer

October 4, 2011

How many triangles are there in the diagram?



Answer

A total of 27.

16 small triangles,

7 triangles containing 4 small triangles,

3 triangles containing 9 small triangles,

And then the one big triangle.



## Bell Ringer

October 5, 2011

A farmer has a fox, a chicken, and a bag of grain, and he needs to get all three across a river. He can only take one of these three across at a time. If he leaves the fox and the chicken alone on the same bank, the fox will eat the chicken. If he leaves the chicken and the grain alone on the same bank, the chicken will eat the grain. How can he get all three across?

## Answer

He must take the chicken across,  
come back, take the grain across,  
take the chicken back, take the  
fox across, go back, and then take  
the chicken across.



Bell Ringer

October 6, 2011

How many times in a day will the minute hand and the hour hand of a clock point in exactly the same direction?

Answer

22.

For every 12-hour period, the two hands point in the same direction eleven times: once every hour from 1:00 until 11:00 (ten times) and then once at 12:00, but not at any time between 11:00 and 12:00.





## Bell Ringer

October 7, 2011

A spider falls to the bottom of a ten-foot well. The spider climbs up two feet every day, but every night it slides back down a foot. How many days will it take the spider to get to the top of the well?

## Bell Ringer

### Answer

9

The net gain after each day and night is one foot (climbs two feet, loses one), so that after 8 days, the spider will be 8 feet up. On the 9th day, the spider will climb the last 2 feet to the rim of the well before night-fall.