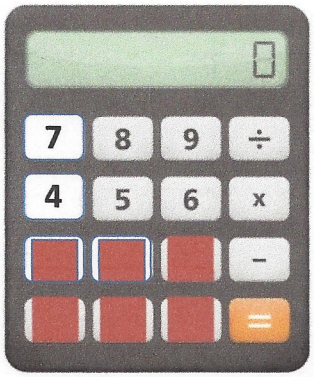
CLASSWORK 9/6 NAME_____

1. **LEVEL ONE:**

Which of these numbers can you make???

The Broken Calculator



19: _____ 43: _____

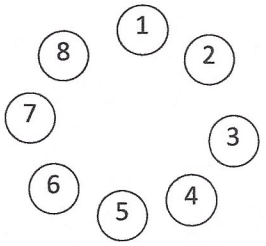
13: _____ 65: _____

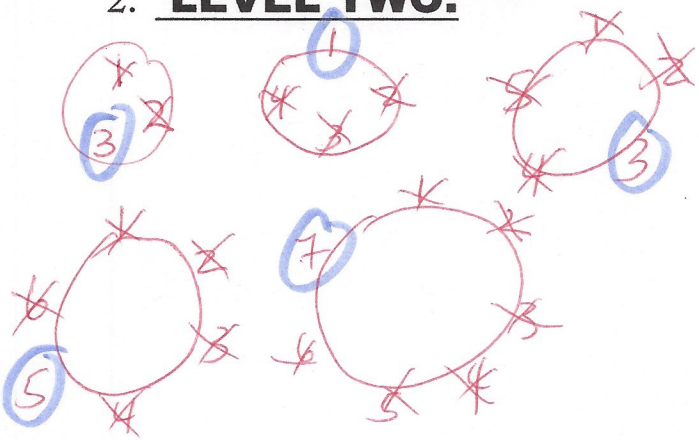
33: _____ 84: _____

source: Ask Dr. Math

2. **LEVEL TWO:**

Knights in a circle...





King Arthur says to the first knight: You stay.
He says to the 2nd knight: You leave.
He says to the 3rdknight: You stay.
etc..... Who is the last knight standing?

Draw circles!

Can you fill out this table? (the last 14 columns are just for challenge- can you find a pattern?)

Number of knights	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Which # knight survives?	1	1	3	1	3	5	7	1	3	5	7	9	11	13

Number of knights	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Which # knight survives?	15	1	3	5	7	9	11	13	15	17	19	21	23	25	27

→ 30 | 31 | 32
29 | 31 | 1 ...

LEVEL 3 - One Puzzle Point

Liars and Truth-tellers

You're on an island where each inhabitant is a *truth-teller* or a *liar*.

Truth-tellers *always* tell the truth; liars *always* lie.

Ms. A and Mr. B are on the island.

- Ms. A says: "One or both of us is a liar."

Determine whether each person is a truth-teller or a liar.

Use a logic table if you like:

My Answer:

Ms. A is a T

Mr. B is a L

A	B
T. T. L ? or L L	
~~F: No liars~~ contra-diction	

I

Possibilities if A is truthful:

A	B
L	T
T	L
~~or L L~~	

Feedback on Part 2 - "Knights"

Things students noticed

- All the numbers are odds
- They are "consecutive odds"
- They go up by 2 UNTIL they get too big to fit in the table size
- They're in groups that start at 1, and the group SIZES are 1, 2, 4, 8, 16... etc.