

Section 1.4 – Practice Problems

Use inductive and Deductive reasoning to solve the following puzzles. Really try!!

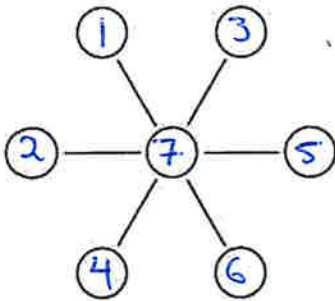
1. Use the numbers 1, 2, 3, 4, 5 and 6 for the multiplication problem

$$\begin{array}{r} 54 \\ \times 3 \\ \hline 162 \end{array}$$

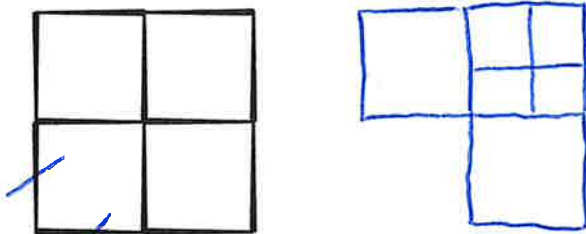
2. Use four 9's in a math equation, with any operators to equal 100

$$99 + (9 \div 9)$$

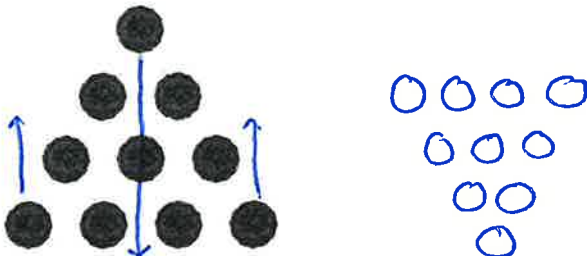
3. Use the numbers 1, 2, 3, 4, 5, 6, and 7 such that each straight line adds to the same number



4. Can you move two toothpicks to create seven squares?



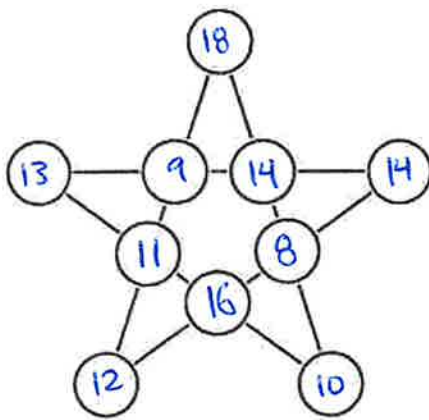
5. Can you move three pennies and flip this image upside down?



6. Every minute a cell splits in half. If at 4:00pm we have one cell in a jar and at 5:00pm the jar is full of cells, when was the jar half full of cells?

4:59pm half become full in one minute

7. Put the numbers 8, 9, 10, 11, 12, 13, 14, 14, 16, and 18 in the circles provided such that each row adds to the same number



Multiple scenarios work

8. Put the numbers 1-8 in each square so that each side adds to the middle number


1	8	3
5	12	7
6	4	2

8	4	1
3	13	7
2	6	5

7	3	4
6	14	2
1	5	8

6	1	8
2	15	4
7	5	3

9. A person has an 8-litre jug of water and two empty jugs that hold 5 litres of water and 3 litres of water. How do they divide the 8-litre jug of water into 2 jugs with 4 litres each?

8L	5L	3L		8L	5L	3L
8	0	0		1	4	3
3	5	0		0	4	4
3	2	3				
6	2	0				
6	0	2				
1	5	2				

10. You are in a jail cell with two doors. One leads to freedom the other to the dungeon. There are two guards, one always tells the truth, the other always lies. You can ask just one question to either guard. What is your question and which one will you ask?

"If I want freedom, which door will the other guard tell me to go through?"

Ask both.

Answer Key – Section 1.4

See Website for Detailed Answers

Extra Work Space