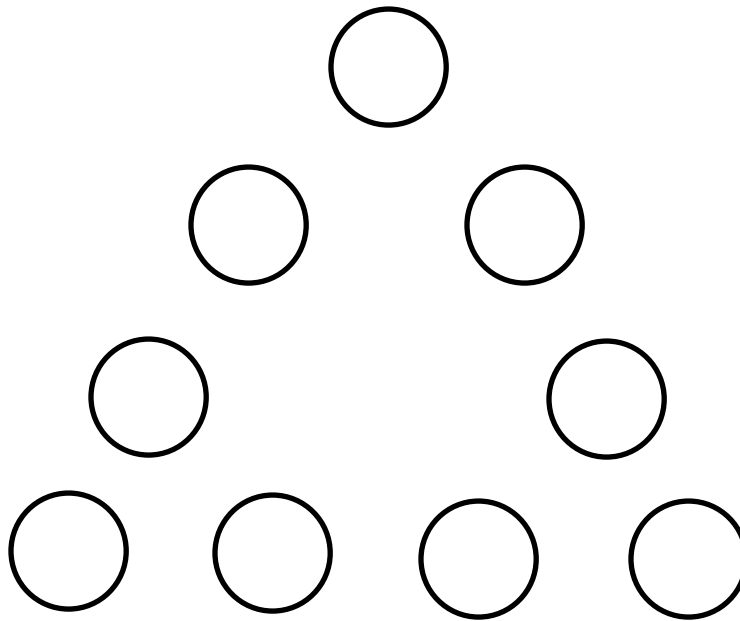


Section 1.4 – Puzzles

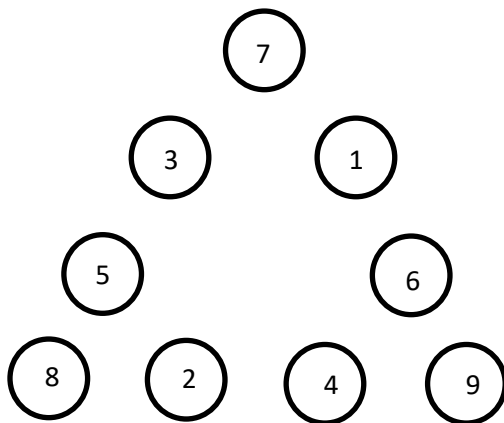
This booklet belongs to: _____ Block: _____

- The following section contains a number of puzzles and games.
- The solution may come quickly or take time, do not rush to look at the answer
- Use your deduction and induction strategies to help you work through them

Example: Put the numbers 1, 2, 3, 4, 5, 6, 7, 8, and 9 in the circles so that each edge adds up to the same number



Solution: There are many solutions to this problem. Here is one of them.

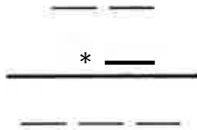


- Put the three largest numbers in the 3 corners
- The six remaining numbers:
 $1 + 2 + 3 + 4 + 5 + 6 = 21$
- Notice $7 + 9 = 16$, $8 + 9 = 17$ and $7 + 8 = 15$
- So we need 3 pairs of numbers that have sums that differ by one or two
- $6 + 7 + 8 = 21$, so we need pairs that add to those
- $2 + 4 = 6$
- $3 + 5 = 8$
- $1 + 6 = 7$
- Those are our corresponding pairs

Section 1.4 – Practice Problems

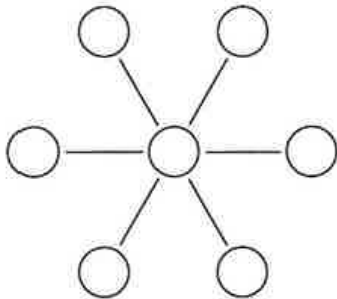
Use inductive and Deductive reasoning to solve the following puzzles. Really try!!

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

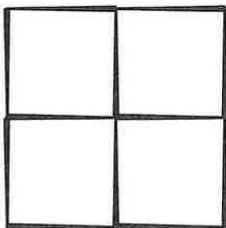


2. Use four 9's in a math equation, with any operators to equal 100

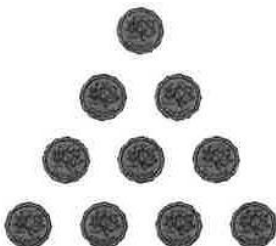
3. Use the numbers 1, 2, 3, 4, 5, 6, and 7 such that each straight line adds to the same number



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

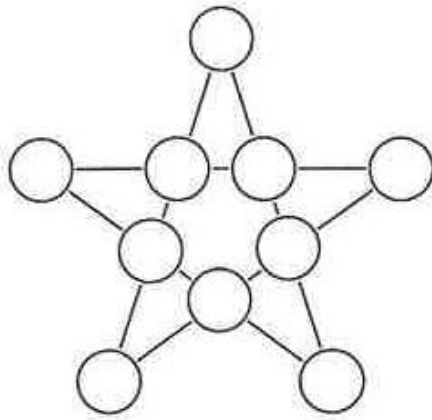


5. Can you move three pennies and flip this image upside down?

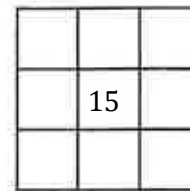
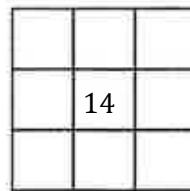
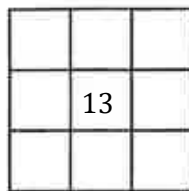
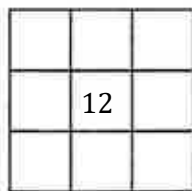


6. Every minute a cell splits in half. If at 4:00pm we have one cell in a jar and at 5:00pm the jar is full of cells, when was the jar half full of cells?

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



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



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?

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?

Answer Key – Section 1.4

See Website for Detailed Answers

Extra Work Space