

Task One: 5 Points

You find a backpack with a 3-digit lock.

A sticky note nearby says:

- The numbers are all different.
- The sum of the numbers is 9.
- The number in the hundreds place is twice the number in the tens place.
- The number in the ones place is not 1.

What is the code to open the backpack?

Task Two: 10 points

Four students — Alex, Bella, Carlos, and Dana — each have a different after-school activity: soccer, piano, art class, and swimming.

They all occur at different times: 3:00, 3:30, 4:00, and 4:30.

Here are the clues:

1. Carlos goes to his activity later than the person who has art class.
2. Bella's activity is at 3:30.
3. Dana does not go to soccer or piano.
4. The student going swimming goes at 4:30.
5. Alex has his activity before Dana.

Who is doing what, and at what time?

Task Three: 10 points

Five students — Mia, Ethan, Lily, Noah, and Grace — were in the kitchen when the last cookie went missing.

Only one of them is telling the truth. The others are lying.

Here's what they each said:

- Mia: "It wasn't me."
- Ethan: "Lily took the last cookie."
- Lily: "Grace didn't take it."
- Noah: "Ethan is lying."
- Grace: "Noah did it."

Who actually took the last cookie?

Task Four: 15 points

The principal has locked the treasure box of treats inside locker **#237**, but she forgot the code! She left behind some clues. Your task is to solve the clues and figure out the **3-digit locker code**.

Clues:

1. **Clue #1 – The Hundreds Digit**
It's the number of sides on two triangles plus the number of corners on a square.
2. **Clue #2 – The Tens Digit**
It's half of the number you get when you multiply 3 by 6.
3. **Clue #3 – The Ones Digit**
It's the number of letters in the word "seven."

Answer Key:

Task One:

Let's call the digits:

- **H** = hundreds place
- **T** = tens place
- **O** = ones place

From clue 3:

$$H = 2 \times T$$

From clue 2:

$$H + T + O = 9$$

Substitute:

$$(2T) + T + O = 9 \rightarrow 3T + O = 9$$

Now try values of **T** that make sense (must be a digit: 1–4, since $2 \times T$ must also be a digit):

Try T = 1:

- $H = 2 \rightarrow H = 2$
- $3T + O = 9 \rightarrow 3(1) + O = 9 \rightarrow O = 6$
- Digits: 2, 1, 6 — all different ✓
- $O \neq 1$ ✓

Code: 216

Task Two:

Name	Activity	Time
Alex	Art	3:00
Bella	Piano	3:30
Carlos	Soccer	4:00
Dana	Swimming	4:30

Task Three:

Answer: Lily took the cookie!

Task Four:

- Clue 1: Two triangles = 6 sides, one square = 4 corners $\rightarrow 6 + 4 = 10 \rightarrow$ Only take the 0 (last digit).
- Clue 2: $3 \times 6 = 18 \rightarrow 18 \div 2 = 9$
- Clue 3: "Seven" has 5 letters

Locker Code: 0 9 5