



Problem of the Week

Problem A and Solution

Reading Randomly

Problem

Anya wants to get into the habit of reading for at least 20 minutes each day. She makes a plan to build up her reading gradually over several days. On Day 1, she reads for 5 minutes. After Day 1, she plans to read according to the following pattern:

- On even-numbered days, she reads twice as long as she did the day before.
- On odd-numbered days, she reads for 4 fewer minutes than she did the day before.

If she follows the pattern, on which day is the first time Anya reads for at least 20 minutes? Justify your answer.

Solution

One way to solve this problem is to create a table to keep track of how long Anya reads each day.

Day	Even/Odd	Minutes Reading
1	odd	5
2	even	$5 \times 2 = 10$
3	odd	$10 - 4 = 6$
4	even	$6 \times 2 = 12$
5	odd	$12 - 4 = 8$
6	even	$8 \times 2 = 16$
7	odd	$16 - 4 = 12$
8	even	$12 \times 2 = 24$

If she follows the pattern, Anya reads for at least 20 minutes on Day 8.