

Student Name: \_\_\_\_\_

1. There are 8 people in a classroom. Each person has to shake hands once with everyone else in the room. How many handshakes would occur?

Answer: \_\_\_\_\_

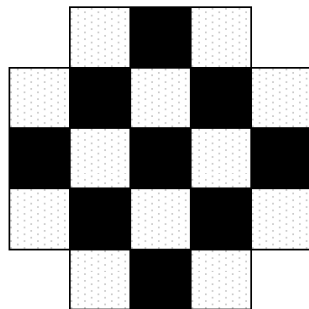
2. What is the smallest positive number divisible by 2, 3, 4, 5, and 6?

Answer: \_\_\_\_\_

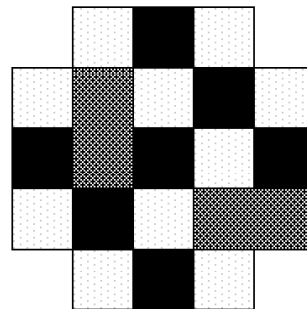
3. A cube is cut up into 8 identical smaller cubes. If the height of the original cube is 6, what is the height of the new cubes?

Answer: \_\_\_\_\_

4. Jimmy has a 5x5 chessboard with its 4 corners removed. He wants to put dominoes on the board such that they do not overlap. One domino has the size of 2 squares on the chessboard, which means each domino covers exactly two adjacent squares: one white and one black. What is the maximum number of dominoes he can place on this chessboard at the same time?



The chessboard



Example of two dominoes on the chessboard

Answer: \_\_\_\_\_

5. The perimeter of a rectangle is 30 cm. The width of the rectangle is half of its length. Find the area of the rectangle.

Answer: \_\_\_\_\_

6. Suppose one orange weighs the same as 2 peaches, and one peach weighs the same as 3 apricots. How many apricots weigh the same as 2 oranges and 1 peach together?

Answer: \_\_\_\_\_

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7. A 4x4 grid is filled with numbers, with the following properties:
- a. The sum of the 4 numbers in the first row is 15.
  - b. The sum of the 4 numbers in the second row is 26.
  - c. The sum of the 4 numbers in the third row is 35.
  - d. The sum of the 4 numbers in the fourth row is 44.
  - e. The sum of the 4 numbers in each column is the “magic number”.
- What is the magic number?


Answer: \_\_\_\_\_

8. How many pairs of prime numbers add up to 199?

Answer: \_\_\_\_\_