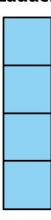4.1 | 4.2 | 4.3 | 4.4 | 4.5

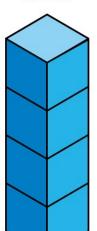# 4.1 Taking the Plunge
Equivalent Expressions I

One of the most popular rides at Wild World is the Sky Dive. Riders are lifted in a car 250 feet in the air. When the car is released, it falls back to the ground. It reaches a speed near 50 miles per hour.

The riders' seats are around a tower that looks like a stack of cubes made from steel pieces. Each face of the Sky Dive tower looks like a ladder of squares.

Ladder

Tower

- How many steel pieces do you need to build each of these figures?

Suppose that you were building the tower for a similar ride.

> ? • How many steel pieces would you need to make a ladder of *n* squares?
>
> • How many steel pieces would you need to make a tower of *n* cubes?

As you work on these questions, it might help to make some model ladders using toothpicks.

Problem 4.1

(A) **1.** Look at the ladder of squares. What numbers would go in the second row of this table?

Number of Squares	1	2	3	4	5	10	20
Number of Pieces	4	■	■	■	■	■	■

2. Write an equation that shows how to find the number of pieces P needed to make a ladder of n squares.

(B) **1.** Look at the tower of cubes. What numbers would go in the second row of a table that counts steel pieces needed to make a tower of n cubes?

Number of Cubes	1	2	3	4	5	10	20
Number of Pieces	12	■	■	■	■	■	■

2. Write an equation that shows how to find the number of steel pieces in a tower of n cubes.

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