## Unit 3 Lesson 12: Arithmetic with Complex Numbers

### 1 Math Talk: Telescoping Sums (Warm up)

#### Student Task Statement

Find the value of these expressions mentally.

### 2 Adding Complex Numbers

#### Student Task Statement

1. This diagram represents .

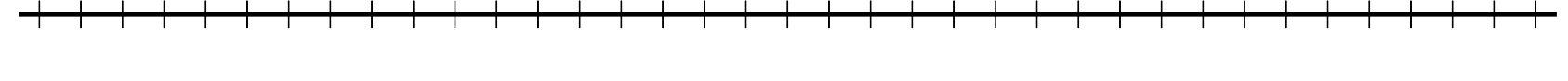
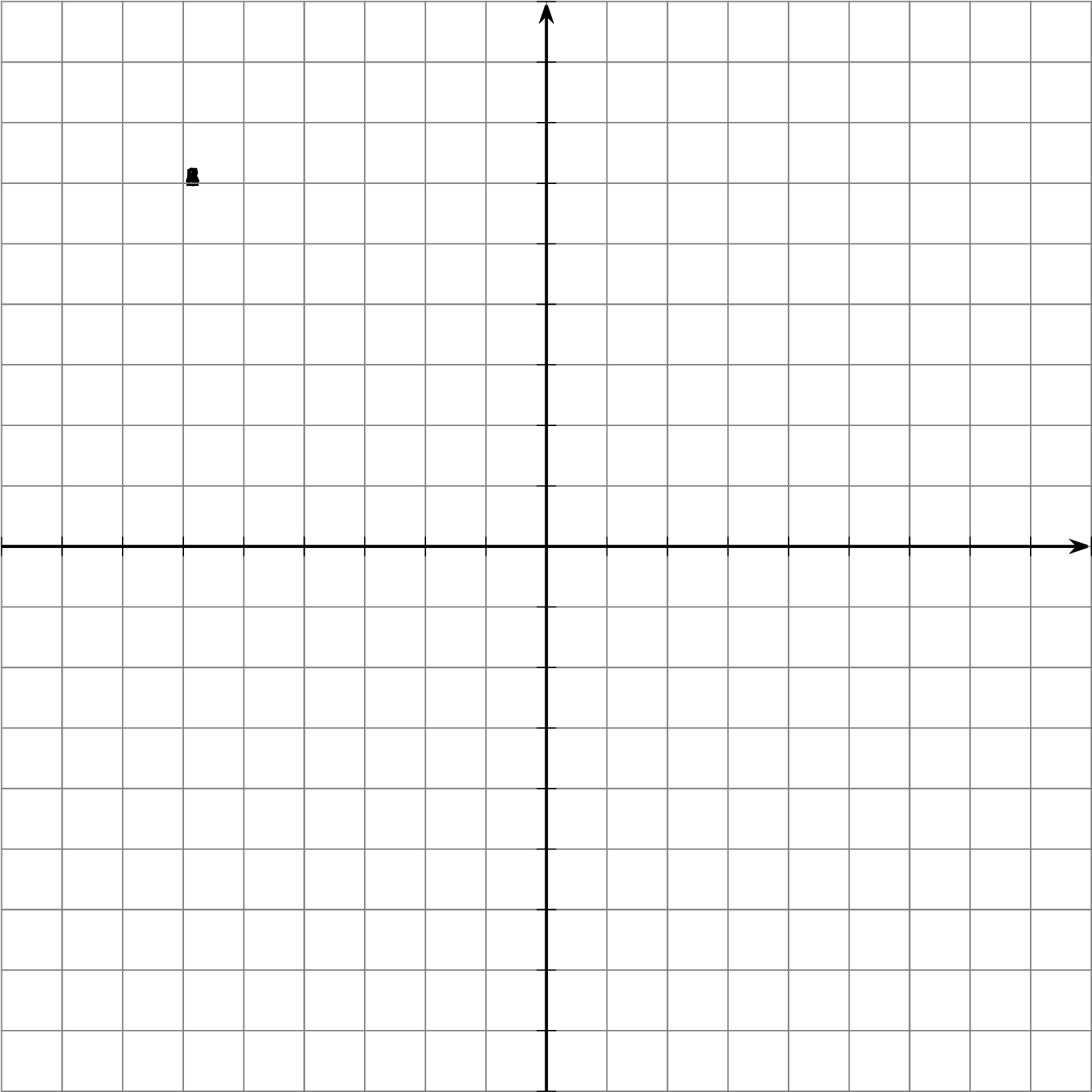
* 
  1. How do you see represented?
  2. How do you see represented?
  3. What complex number does represent?
  4. Add “like terms” in the expression . What do you get?

1. Write these sums and differences in the form , where and are real numbers.
   1. (Check your work by drawing a diagram.)

### 3 Multiplication on the Complex Plane

#### Student Task Statement

1. Draw points to represent 2, 22, 23, and 24 on the real number line.

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  1. Write , , , and in the form .
  2. Plot , , , and on the complex plane.
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