

Info Gap: What Was Multiplied?

**Problem Card 1**

There are two complex numbers  $(a + bi)$  and  $(c + di)$  whose product is an imaginary number. What are the two complex numbers?

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**Data Card 1**

- The product of the two numbers is  $34i$ .
- The real part of  $(a + bi)$  is 4.
- The imaginary part of  $(a + bi)$  is -1.

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**Problem Card 2**

There are two complex numbers  $(a + bi)$  and  $(c + di)$  whose product is a real number. What are the two complex numbers?

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**Data Card 2**

- The product of the two numbers is 12.
- The real part of  $(a + bi)$  is 2.
- The imaginary part of  $(c + di)$  is 3.

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**Problem Card 3**

There are two complex numbers  $(a + bi)$  and  $(c + di)$ , and  $(a + bi)^2 = (c + di)$ . What is  $(a + bi)$ ?

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**Data Card 3**

- The real part of  $(c + di)$  is -6.
- The imaginary part of  $(c + di)$  is 8.