Problem Solving:
Make and Test Conjectures

Remember — A **conjecture** is a generalization that you think is true.

Make a conjecture.	The sum of two prime numbers is never a prime number.
Find and test several examples. 3 + 5 = 8	Prime numbers: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29 5 + 7 = 12 2 + 3 = 5
Do the examples show your conjecture is reasonable or not reasonable?	The sum may be prime. The conjecture is not reasonable.

Test these conjectures. Give three examples. Explain whether the conjectures are *reasonable* or *not reasonable*.

1. All multiples of 5 are even numbers.

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2. All odd numbers are prime numbers.

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3. The difference of two even numbers is always an even number.

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4. Write a conjecture about the sum of two negative integers. Then test your conjecture.

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5. Critical Thinking After testing, why is a conjecture considered reasonable, but not proven?

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