Name:

Awesome Algebra: What’s Next

Your friend tells you that he put 57 in the calculator pressed +, −, ×, ÷ and then pressed a secret number. The answer was 52. He then repeated these steps with 3 different secret numbers. The answers were 47, 42, 37. What will be the tenth number on the calculator? Explain your thinking.

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2. Make your own “What’s Next?” problems by filling in the tables on the “Creating What’s Next?” worksheet. Trade with a partner and solve each other’s problems. How would you explain to a friends who was not in school today the best way to solve these problems.

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3. Sometimes you can find the next number in a pattern, but it is hard to guess what the 20th or 50th or 100th number in a pattern would be without actually writing all the numbers out. For example, if you see 3, 7, 11, 15, 19 as the first five numbers in a pattern, how could you find the 20th, 50th and 100th numbers in this patterns?

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4. What is the pattern? What is the 15thh number? How do you get that number without extending the table?

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| Term | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Number | 1 | 3 | 6 | 10 | 15 |  |  |  |  |

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5. What is the pattern? What is the 15th number? How do you get that number without extending the table?

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Term | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Number | 512 | 256 |  | 64 |  |  |  | 4 |  |

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