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| **Determining Term Numbers and Term Values** | | | |
| Determines missing elements in linear and non-linear patterns  1, 2, \_\_, 8, 16, 32, \_\_\_, 128  “I can see that each term is twice as great as the previous term. So, the missing terms are 4 and 64.” | Writes and uses an equation to determine pattern values  What is the value of this pattern when  *x* = 50?    “An equation to represent this pattern is *y* = –2*x* + 9. When *x* = 50,  –2*x* + 9 = –2(50) + 9  = –91 When *x* is 50, *y* is –91.” | Writes and uses an equation to determine a term number when term value is known  The equation y = –2x + 9 represents a pattern.  Which term in this pattern has a value of –41?  “I need to find a value of *x* so that  –41 = –2*x* + 9. This means that –41 is 9 greater than –2*x*.  So, –41 – 9 = –2*x*, or –50 = –2*x*. Using mental math, this is *x* = 25.” | Develops and uses linear equations to solve applied problems  Sky pays an annual gym membership fee of $50 and monthly fees of $25. Write an equation to describe the total cost. If Sky keeps their membership for 8 months, how much will they have spent?  “I’ll let the number of months Sky is a member be *x*. The total cost of membership is  *y* = 50 + 25*x*.  When *x* = 8,  *y* = 50 + 25(8)  = 50 + 200  = 250 Sky will pay $250 for 8 months of membership.” |
| **Observations/Documentation** | | | |
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