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| **Solving and Graphing Integer Inequalities** |
| Determines whether a number is part of the solution for an inequality“To check whether *x* = 3 is a solution to the inequality –7*x* + 4*x* > –3, I’m going to evaluate –7*x* + 4*x* when *x* is 3. –7(3) + 4(3) = –21 + 12  = –9This is less than the number on the right side of the inequality, so 3 is not part of the solution set.” | Matches an inequality with the graph that shows its solution“Which of these graphs shows the solution to the inequality 5 – 2x ≤ –3? When *x* = 4, 5 – 2*x* = 5 – 2(4)  = 5 – 8 = –3So, *x* = 4 is the solution to the related equation.Testing a point on the second graph, when *x* = 0, 5 – 2*x* = 5 – 2(0)  = 5This is greater than the number on the right side of the inequality, so it is not part of the solution.The first graph is correct.” | Solves inequalities involving integersSolve the inequality –3*n* – 6 ≥ 6.“For the related equation –3*n* – 6 = 6, I can writeThe solution to the equation is *n* = –4. What happens when *n* is greater than –4, say *n* = 0?–3*n* – 6 = –3(0) – 6  = –6 This is less than 6, so 0 is not part of the solution set. I know the solution is *n* ≤ –4.” | Graphs the solution to an inequality involving integersGraph the solution to the inequality –3*n* – 6 ≥ 6.“For the inequality –3*n* – 6 ≥ 6, my solution was *n* ≤ –4. I draw a solid dot at *n* = –4 because it is part of the solution. I draw a line extending to the left to show that all the numbers less than –4 are also part of the solution.”  |
| **Observations/Documentation**  |
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