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Alg2: SET \& INTERVAL NOTATION with INEQUALITIES Worksheet \#1
COMPLETE the table below, graph the solution, express the solution in set and interval notation.
When necessary solve the inequality. ALL WORK must be shown. Attach additional paper if necessary.

| INEQUALITIES | GRAPH | SET NOTATION | INTERVAL NOTATION |
| :---: | :---: | :---: | :---: |
| 1. range: greater than 7 |  |  |  |
| 2. domain: at most -6 |  |  |  |
| 3. range: no more than 5 |  |  |  |
| 4. domain: at least 45 |  |  |  |
| 5. domain: between 7 and 23 |  |  |  |
| 6. domain: All real numbers |  |  |  |
| 7. range: Not a negative number |  |  |  |
| 8. range: Not equal to 9 |  |  |  |
| 9. domain: Between -9 and 12 inclusive | $\longleftrightarrow$, , , , , 1 , , + |  |  |
| 10. range: The empty set |  |  |  |


| INEQUALITIES | GRAPH | SET NOTATION | INTERVAL NOTATION |
| :---: | :---: | :---: | :---: |
| 11. $4(5-8 x) \geq-2-4(8 x+3)$ |  |  |  |
| 12. $-7 x-3 x+2<-8 x-8$ | $\xrightarrow[+1-1+1+1]{ }$ |  |  |
| 13. $4 x-\frac{x}{3} \geq 5$ |  |  |  |
| 14. $4(2 x-3) \leq-2(x-1)+10 x$ |  |  |  |
| 15. $-8 \mathrm{x}+4(5 \mathrm{x}+1)<-6 \mathrm{x}-14$ |  |  |  |

Draw a graph that represents each of the following solutions.

| 1. $[3, \infty)$ | $\xrightarrow{+}$ | 4. $\{x \mid x>7\}$ | $\longleftrightarrow$ 1 1 1 1 1 1 1 1 1 |
| :---: | :---: | :---: | :---: |
| 2. $(-\infty, 7)$ | $\xrightarrow[+1+1+1]{+1}$ | 5. $\{y \mid y \leq-9\}$ |  |
| 3. $(-5,9]$ | $\xrightarrow[+1,1+\ldots+\ldots]{ }$ | $6\{w \mid-3 \leq w<7\}$ | $\xrightarrow[+1-1+\ldots+\ldots]{ }$ |

SAT practice question: If two more than $m$ is a negative integer and if 5 more than $m$ is a positive integer, which of the following could be a value $\begin{array}{llllll}\text { of } m \text {. A. }-7 & \text { B. }-5 & \text { C. }-3 & \text { D. } 4 & \text { E. } 6\end{array}$

