$\qquad$ DATE $\qquad$
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## 1-6 Skills Practice <br> Solving Compound and Absolute Value Inequalities

Write an absolute value inequality for each graph.

2.

$|x|>7.5$
4.


$|x| \geq 4$
8.


Solve each inequality. Graph the solution set on a number line.

$$
\xrightarrow[4-3-2-10]{2 c+1>5 \text { or } c<0} \quad\{c \mid c>2 \text { or } c<0\}
$$


15. $|t| \geq 3 \quad\{t \mid t \leq-3$ or $t \geq 3\}$

19. $|n-5|<7 \quad\{n \mid-2<n<12\}$


12. $4 a \geq-8$ or $a<-3 \quad\{a \mid a \geq-2$ or $a<-3\}$

14. $w-4 \leq 10$ or $-2 w \leq 6$ all real numbers

16. $|6 x|<12 \quad\{x \mid-2<x<2\}$

18. $|p+2| \leq-2 \varnothing$

$\qquad$ DATE $\qquad$ PERIOD $\qquad$

## 1-6 Word Problem Practice <br> Solving Compound and Absolute Value Inequalities

1. AQUARIUM The depth $d$ of an aquarium tank for dolphins satisfies $|d-50|<5$. Write a compound inequality that describes the possible depth of the tank.
$45<d<55$
2. NUMBERS Amy is thinking of two numbers $a$ and $b$. The sum of the two numbers must be within 10 units of zero. If $a$ is between -100 and 100 , write a compound inequality that describes the possible values of $b$.
$-110<b<110$
3. AIRLINE BAGGAGE Many airlines have a size limitation for carry-on luggage. The limitation states that the sum of the length, width, and height of the suitcase must not exceed 45 inches.

a. Write an inequality that describes the airlines' carry-on size limitation.
$h+\ell+w \leq 45$
b. A passenger needs to bring a soil sample on the plane that is at least 1 cubic foot. The passenger is bringing it in a suitcase that is in the shape of a cube with side length $n$ inches. Write an inequality that gives the minimum length for $n$.
$n \geq 12$
c. Write a compound inequality for $n$ using parts a and $\mathbf{b}$. Find the maximum and minimum values for $n$.
$n \geq 12$ and $3 n \leq 45$; $n$ is at least 12 and at most 15
