

Use the information in the diagram and the table to solve each problem.

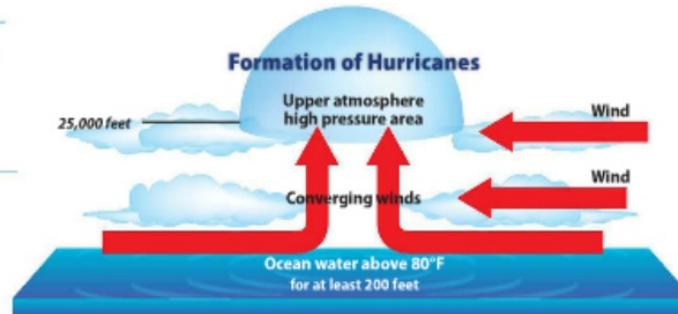
1. Write an inequality representing the temperature t of the ocean water during the formation of a hurricane. $t > 80$

2. Write an inequality representing the depth d of the water that must be greater than 80°F in order for a hurricane to form. $d \geq 200$

3. The air needs to be humid up to about 18,000 feet for a hurricane to form. Write an inequality to represent this altitude a of the air above the ocean. $a \leq 18,000$

4. Air pressure decreases during a storm. The difference between the normal air pressure n and the air pressure during the 1935 Florida Keys hurricane was greater than 121 millibars. Write and solve an inequality to find the normal air pressure in the Florida Keys before the hurricane.
 $n - 892 > 121; n > 1,013 \text{ mb}$

5. The air pressure of Hurricane Katrina at landfall was greater than 17 millibars plus the air pressure p before landfall. Write and solve an inequality to find the air pressure of the storm before landfall.
 $920 > p + 17; p < 903 \text{ mb}$



Rank	Hurricane	Pressure (millibars)
1	Florida Keys, (Labor Day), 1935	892
2	Hurricane Camille, 1969	909
3	Hurricane Katrina, 2005	920
4	Hurricane Andrew, 1992	922
5	Texas (Indianola), 1886	925



Write the correct term for each clue in the crossword puzzle.

Across

3. an expression that describes the relationship between each input and output

Extra Practice

Determine which number is a solution of the inequality.

14. $5 - h \geq 2$; 3, 4, 5 **3**

Howdy! Help

Try 3. $5 - 3 \geq 2$
 $2 \geq 2$ ✓

Try 4. $5 - 4 \geq 2$
 $1 \geq 2$ ✗

Try 5. $5 - 5 \geq 2$
 $0 \geq 2$ ✗

15. $j + 8 \leq 8$; 0, 1, 2 **0**

Is the given value a solution of the inequality?

16. $25 \geq 5u$, $u = 5$ **yes**

17. $13 \leq 4v$, $v = 3$ **no**

18. Mrs. Crane recorded the number of sandwiches sold in her deli on one day. If she sells more than 25 of a type of sandwich, she orders more meat from the butcher. Use the inequality $s > 25$, where s is the number of sandwiches sold, to determine which meats she needs to order. **ham and turkey**

Sandwich	Number Sold
Club	25
Ham	30
Roast beef	22
Turkey	28

19. The height of each member of a family is listed in the table. In order to ride a certain roller coaster at an amusement park, you must be at least 54 inches tall. Use the inequality $h \geq 54$, where h is a family member's height, to determine who can ride the roller coaster. **Carmen, Eliot, and Ryan**

Name	Height (in.)
Carmen	66
Eliot	54
Isabella	49
Jackson	52
Ryan	71

20. **Be Precise** Pedro subscribes to a service where he can download up to five free ringtones each month. Each ringtone after that costs \$3.50 each. During which months did Pedro exceed the plan? How much is Pedro's additional cost in 6 months? **February and April; \$14.00**

Month	Ringtones
January	5
February	6
March	4
April	8
May	5
June	4



Extra Practice

Write an inequality for each sentence.

13. You cannot spend more than 50 dollars. $s \leq 50$

Handwritten Note: Let s represent what you can spend. Cannot spend more means you can spend less than or equal to 50 dollars.

14. More than 800 fans attended the opening soccer game. $f > 800$

15. The heavyweight division is greater than 200 pounds. $h > 200$

Graph each inequality on a number line.

16. $g < 6$



17. $z > 18$

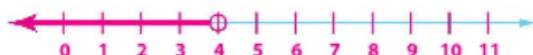


18. $h \geq 3$



19. On a certain day, the temperature in Bismarck, North Dakota, was below 4 °F. Write and graph an inequality to describe the possible temperatures.

$t < 4$



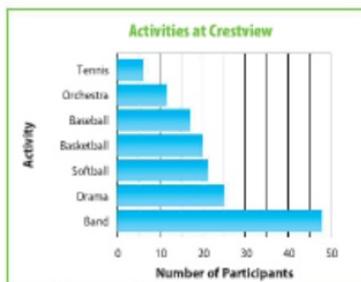
20. **CCSS Use Math Tools** The graph shows the number of students who participate in some of the activities offered at Crestview Middle School.

- a. Which activities have more than 20 participants?
at least 20? fewer than 19?

softball, drama, band; basketball, softball,
drama, band; tennis, orchestra, baseball

- b. Write an inequality comparing the number of orchestra participants and the number of tennis participants.

$12 > 6$



Extra Practice

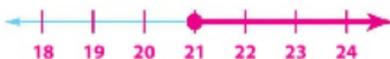
Solve each inequality. Graph the solution on a number line.

13. $a + 4 < 9$ $a < 5$



$$\begin{array}{r} a + 4 < 9 \\ -4 \quad -4 \\ \hline a < 5 \end{array}$$

14. $x - 8 \geq 13$ $x \geq 21$



15. $d + 13 \geq 22$ $d \geq 9$



16. $25t \leq 100$ $t \leq 4$



17. $\frac{g}{2} < 6$ $g < 12$



18. $\frac{r}{9} > 8$ $r > 72$



19. A community needs to raise at least \$5,000 to build a new skateboarding park. They are selling backpacks for \$25 each to raise the money. Write and solve an inequality to determine the minimum number of backpacks they need to sell in order to reach this goal.

$25b \geq 5,000$; $b \geq 200$; They need to sell a minimum of 200 backpacks.

20. A sales associate at a computer store receives a bonus of \$100 for every computer he sells. He wants to make \$2,500 in bonuses next month. Write and solve an inequality to find the minimum number of computers he must sell.

$100x \geq 2,500$; $x \geq 25$; He must sell at least 25 computers.

Model with Mathematics Solve each inequality. Graph the solution on a number line.

21. $n + \frac{2}{7} \geq \frac{1}{2}$ $n \geq \frac{3}{14}$



22. $0.2g > 1.8$ $g > 9$

