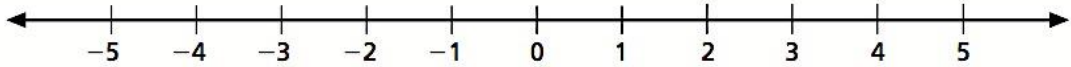


**Graphing Inequalities**

$$-1\frac{1}{2} \quad 2^2 \quad \pi \quad \sqrt{3} \quad -\frac{2}{9} \quad 4\frac{1}{4} \quad -3$$

Place a solid dot on the number line below to represent each number. Label each dot with its number.



Using one of the symbols in the table below, write several true statements using different pairs of numbers above.

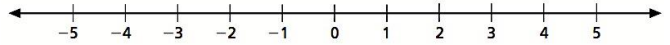
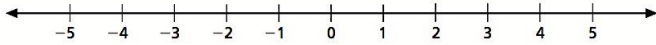
Symbol	Meaning
$>$	is greater than
$<$	is less than
$\geq$	is greater than or equal to
$\leq$	is less than or equal to

A mathematical sentence that contains one of the symbols  $<$ ,  $>$ ,  $\leq$ ,  $\geq$ , or  $\neq$  is called an **inequality**.

**Graphing equalities and inequalities:**

Solve  $m + 9 = 14$  and graph its solution

Graph the inequality  $p > -2$



Is 4 a solution to each inequality below?

$x < 4.1$

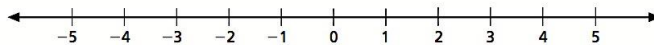
$x > 4$

$x \geq 4.1$

$x \geq 3.999$

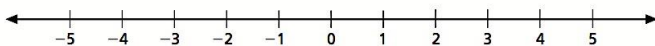
**Interval notation** is a way of expressing the solution set of an inequality using brackets  $[ ]$  and parentheses  $( )$ . Brackets indicate that the value is included in the set and parentheses indicate that every value up to, but not including, the value is in the set.

Graph  $k \geq -5$



Write then graph an inequality to represent this situation:

Joseph decides not to spend more than \$4 at the store.



# Why Did The Kangaroo See A Psychiatrist?



Find the graph of the solution set of any inequality below in the corresponding column of graphs. Notice the letter next to it. Write this letter in each box that contains the number of that exercise. Keep working and you will discover the answer to the title question.

① $x < 1$		⑩ $x < -1$	
② $x \leq 1$		⑪ $-1 < x$	
③ $x > 1$		⑫ $3 \geq x$	
④ $x \geq 1$		⑬ $x < 3$	
⑤ $x \neq 1$		⑭ $x \neq 0$	
⑥ $x < -2$		⑮ $0 \leq x$	
⑦ $x > -2$		⑯ $0 \geq x$	
⑧ $x \leq -2$		⑰ $0 < x$	
⑨ $x \geq -2$		⑱ $0 > x$	

6	16	15	13	11	1	16	7	16	1	15	6	4	6	16	15	5	9	12	16	16	8	2	11	3	9	13	18	10	17	14	4
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