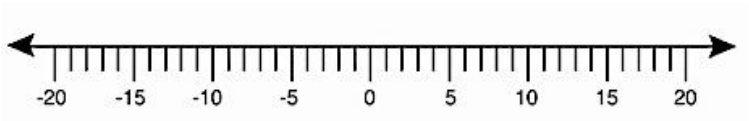
7A.3 **NOTES** Name:_____

Solving Inequalities

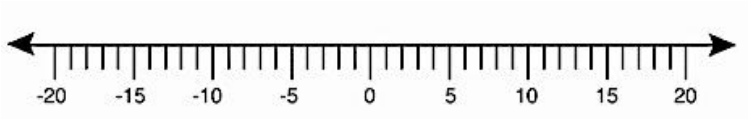
Inequality Rule: When multiplying or dividing both sides of an inequality by a negative number, reverse the direction of the inequality symbol.

Solve each inequality below. Graph the solution. Use interval notation to define the solution set.

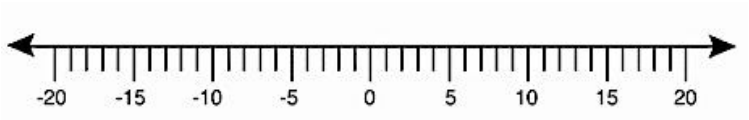
$k + 3 \geq -4$



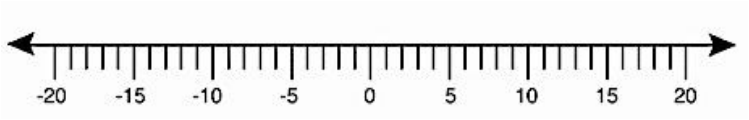
$-3n - 5 < 1$



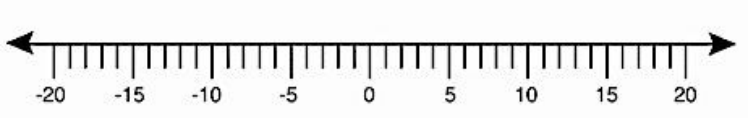
$x - 9 \geq -5$



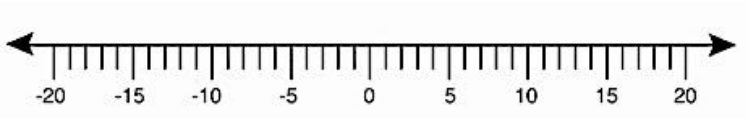
$5y > -45$



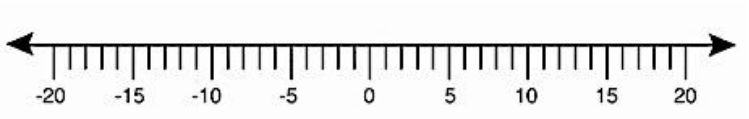
$-2p \leq 10$



$4(x - ½) < 6$



$15(a + 4) \leq 5(12 - 5a)$



Write and solve an inequality for each situation below.

Karina is saving money to buy a new leather jacket. The jacket she wants costs $349. She has saved $116. Determine the least amount Karina must save to be able to buy the jacket.

Jonah borrows $1500 for a new car stereo system. He will pay $50 a month until the loan is repaid. Determine the number of months it will take for Jonah's debt to be less than $200.

The current math department budget will allow no more than $6,000 to be spent on technology. The math department decides to buy one computer that will cost $2,400. The rest will be spent on graphing calculators, which cost $80 each. Determine the number of calculators that the math department can purchase.