1.7 Absolute Value Equations and Inequalities

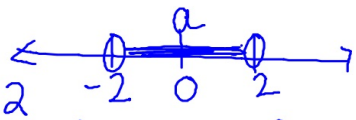
What does the absolute value of a number show? distance from 0
nonnegative #

3 types of absolute value equations or inequalities:

1. $|a| = 2$

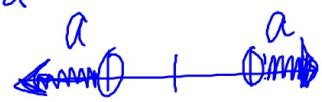
$a = -2$ or $a = 2$

2. $|a| < 2$



$-2 < a < 2$

3. $|a| > 2$



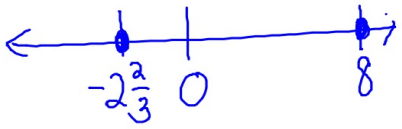
$a < -2$ OR $a > 2$

Solve and graph the solution:

1 $|8 - 3n| = 16$

$8 - 3n = -16$ OR $8 - 3n = 16$

$n = 8$ OR $n = -\frac{8}{3}$



2 $9 \geq |2n + 3| - 8$

-5
|3| -8

$|2n+3| - 8 \leq 9$

dist

$|2n+3| \leq 17$

$-17 \leq 2n+3 \leq 17$

$-20 \leq 2n \leq 14$

$-10 \leq n \leq 7$

3 $5\left|\frac{1}{2}n\right| - 4 > -2\left|\frac{1}{2}n\right| + 10$

$7\left|\frac{1}{2}n\right| > 14$

dist

$\left|\frac{1}{2}n\right| > 2$

$\frac{1}{2}n < -2$ OR $\frac{1}{2}n > 2$

$n < -4$ OR $n > 4$