

6.7 Solving Radical Equations & Inequalities - Day 2 Notes

Objective: Solving radical inequalities.

Radical inequalities are those that contain a variable under the radical sign.

Steps to solve radical inequalities:

1. If the index of the root is even, identify the values of the variable that will make the radicand positive.
(Set the expression under the radical sign \geq zero and solve.)
2. Solve the inequality algebraically.
3. Check your solutions.

Ex. #1 Solve: $\sqrt{x-4} \leq 2$

1. $\sqrt{2x-1} < 5$

Ex. #2 Solve: $2\sqrt{3x-6} \leq 6$

2. $\sqrt{c-2} + 4 \leq 7$

Ex. #3 Solve: $\sqrt{x+6} - 2 > 2$

3. $\sqrt{y+4} + 3 \geq 6$

Ex. #4 Solve: $3\sqrt{2y+5} \geq 9$

4. $2\sqrt{4r-3} > 10$

Application:

The formula: $s = \sqrt{21d}$ relates a stunt car's speed 's' in miles per hour at the beginning of a skid to the length 'd' of the skid in feet. How many feet away from a given wall must the driver start the skid if he is travelling 64 mph?