

Pre Calc II Final Review Chp 5

Note Title

2016-05-25

5.1) Solving Quad Ineq in One Var $ax^2 + bx + c > 0$

- solutions look like: $x < a$ or $x \geq a$...

- think of quad ineq as: $y < 0$ $y > 0$
 $y \leq 0$ $y \geq 0$

- we think of which x values satisfy the y -ineq

- if you can't handle the inner/outer based off concavity, use test points. (zeroes)

- Either way, you still need to find the critical points (CP) by factoring (quadratic = 0) or QF.

- The intervals will be based around CP_1 & CP_2

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when 2 zeroes

$\left\{ \right.$

$x < CP_1$

$CP_1 < x < CP_2$ inner.

or

$x > CP_2$ outer.

when 1 zero

$\left\{ \right.$

$x = CP_1$

test point is $x = CP_1$

$x \neq CP_1$

when no zeroes

$\left\{ \right.$

$x = \emptyset$

any point is test point.

$x \in \mathbb{R}$

Only 1 test point needed. If test point is in inner interval and passes, then the inner interval is the solution; if it doesn't pass, the outer interval is the solution.

5.2) Linear Ineq in 2 Vars.

Change to explicit form:
(slope-intercept)

$y < \text{line}$

$y > \text{line}$

$y \leq \text{line}$

$y \geq \text{line}$

$>$ - shade above, dotted line, strict

\geq - " " solid " , not strict

$<$ - shade below, dotted " , strict

\leq - " " solid " , not strict.

Use test points if you want.

Use general form graphing if you want.

5.3) Quad Ineq in 2 Vars.

Change to explicit form: general, standard, factored
then same as 5.2)

5.4) Solving Systems of Eqns Graphically.

- use substitution: $y_1 - (y_2) = 0$

- start window: $x \in [-c, c]$ $y \in [-c, c]$

- make range bigger if vertical lines

- " " smaller if horizontal lines.

5.5) Solving System of Eqns Algebraically.

- Answer using fractions/irrationals when exact.

- If it doesn't factor easily, check discriminant.

- Checking solutions - subst points x & y and
check inequality (for truth)