

How to make up a painful precalculus problem:

Start with easy algebra 2 problem:

$$x^2 - 5x + 6 = 0.$$

Move some stuff to other side:

$$x^2 - 5x = -6$$

Choose a complication to apply to both sides (e.g.  $\sqrt{\quad}$ ,  $|\quad|$ , etc.). For example,

$$|x^2 - 5x| = |-6|$$

$$|x^2 - 5x| = 6$$

Layer on another complication on both sides

$$\log_6 |x^2 - 5x| = \log_6 6$$

$$\log_6 |x^2 - 5x| = 1$$

Hide the absolute value bars using ~~the~~ the fine print associated with an identity:

$$2 \log_6 |x^2 - 5x| = 2$$

$$\log_6 |x^2 - 5x|^2 = 2$$

$$\log_6 (x^2 - 5x)^2 = 2$$

Last difficulty: Change equal sign to inequality:

$$\boxed{\log_6 (x^2 - 5x)^2 > 2}$$