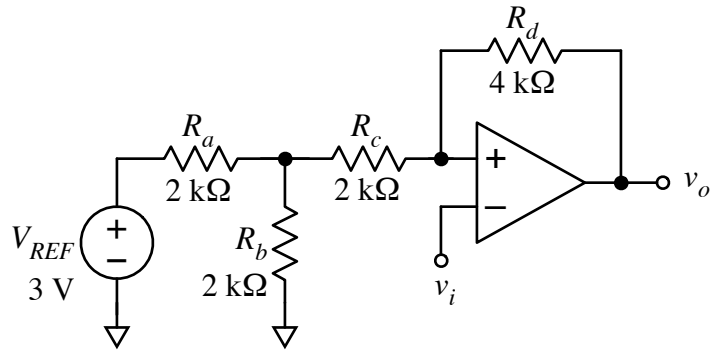A slightly modified version of an inverting comparator with positive feedback is shown. The op amp has output saturation limits at $V_{L+} = 10$ V and $V_{L-} = 0$ V.

Calculate V_{TL} and V_{TH} for the comparator.

R_d

4 kΩ

R_a

2 kΩ

R_c

2 kΩ

V_{REF}

3 V

R_b

2 kΩ

v_i

v_o

Sketch the transfer characteristic — be sure to include important values in the sketch.

$V_{TL} =$ _____; $V_{TH} =$ _____