

## STEP II, 2004, Q1

1 Find all real values of  $x$  that satisfy:

(i)  $\sqrt{3x^2 + 1} + \sqrt{x} - 2x - 1 = 0$  ;

(ii)  $\sqrt{3x^2 + 1} - 2\sqrt{x} + x - 1 = 0$  ;

(iii)  $\sqrt{3x^2 + 1} - 2\sqrt{x} - x + 1 = 0$  .



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