

STEP II, 2011 Q1

- 1 (i) Sketch the curve $y = \sqrt{1-x} + \sqrt{3+x}$.
Use your sketch to show that only one real value of x satisfies

$$\sqrt{1-x} + \sqrt{3+x} = x + 1,$$

and give this value.

- (ii) Determine graphically the number of real values of x that satisfy

$$2\sqrt{1-x} = \sqrt{3+x} + \sqrt{3-x}.$$

Solve this equation.



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