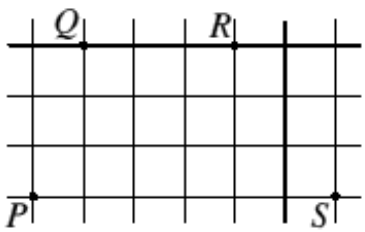
21. Fiona wants to draw a 2-dimensional shape whose perimeter passes through all of the points P, Q, R and S on the grid of squares shown. Which of the following can she draw?

(i) A circle (ii) An equilateral triangle

(iii) A square



A only (i) and (ii) B only (ii) and (iii) C only (i) and (iii)

D all of (i), (ii) and (iii) E none of (i), (ii) and (iii)

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21. B The diagram shows that it is possible to draw a square whose edges go through P, Q, R and S. By drawing lines through P and S each making an angle of 60° with QR, we can construct an equilateral triangle, as shown, whose edges pass through P, Q, R and S. However there is no circle through these four points. The centre of such a circle would be equidistant from Q and R, and hence would lie on the perpendicular bisector of QR. Similarly it would lie on the perpendicular bisector of PS, but these perpendicular bisectors are parallel lines which don't meet.