

Convex Hull

Extreme Points

- To-Left Test

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To-Left Test

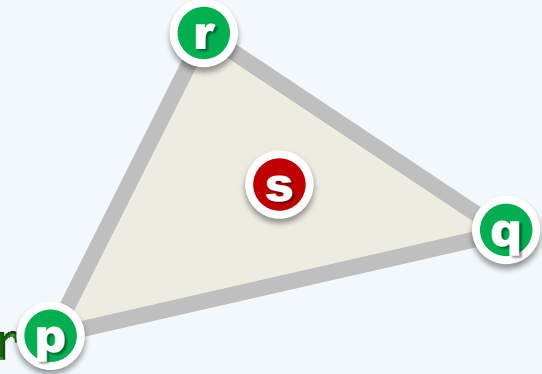
❖ How to test if a point s lies **inside** a given triangle $\Delta(p, q, r)$?

❖ Note that

s lies inside the triangle iff

all the 3 tests return **TURE/FALSE**

when the triangle is given in **CCW/CW** order



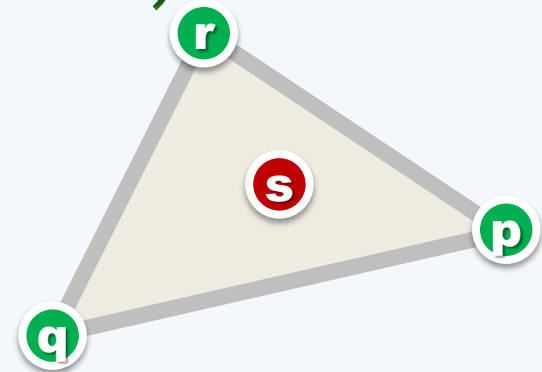
❖ **bool InTriangle**(Point p, Point q, Point r, Point s)

bool pqLeft = **ToLeft**(p, q, s);

bool qrLeft = **ToLeft**(q, r, s);

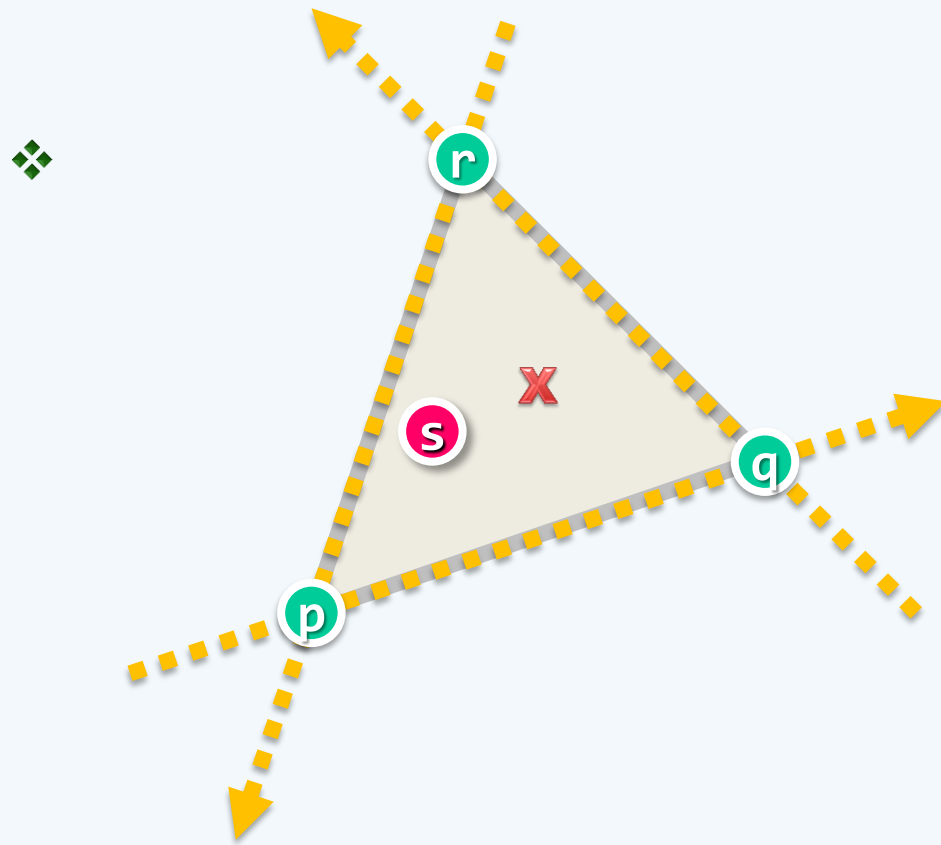
bool rpLeft = **ToLeft**(r, p, s);

return (pqLeft == qrLeft) && (qrLeft == rpLeft);



ITT x1 = TLT x3

❖ / TRUE if s lies **left** to **directed line** ab
ToLeft(a, b, s) = - |
 \ FALSE otherwise



InTriangle(p, q, r, s) iff

ToLeft(p, q, s) ==

ToLeft(q, r, s) ==

ToLeft(r, p, s) == TRUE