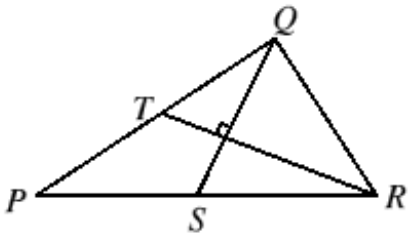
22. In triangle PQR, S and T are the midpoints of PR and PQ respectively; QS is perpendicular to RT; $QS = 8$; $RT = 12$.
What is the area of triangle PQR?

A 24 B 32 C 48 D 64 E 96



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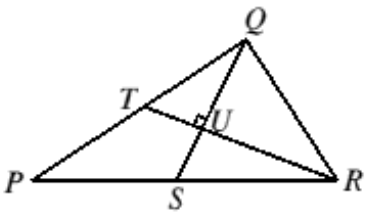
22. D Let U be the point of intersection of QS and RT. As QS and RT are medians of the triangle, they intersect at a point which divides each in the ratio 2:1, so $QU = \frac{2}{3} \times 8 = \frac{16}{3}$.
Therefore the area of triangle $QTR = \frac{1}{2} \times RT \times QU = \frac{1}{2} \times 12 \times \frac{16}{3} = 32$.



As a median of a triangle divides it into two triangles of equal area, the area of triangle PTR is equal to the area of triangle QTR, so the area of triangle PQR is 64.