

$$NE = BC - 2BN = BC - 2 \cdot \left( \frac{AB + BC + AC}{2} - AC \right) =$$

$$= \cancel{BC} - AB - \cancel{BC} + AC = AC - AB$$

$$NE = AC - AB = 5 - 3\sqrt{2} = QR = PT$$

$$5 - 3\sqrt{2} \approx 0.757$$

Other:

$$S_{PQRT} = \sqrt{2} \cdot (5 - 3\sqrt{2}) = 5\sqrt{2} - 6 \approx \boxed{1.071}$$