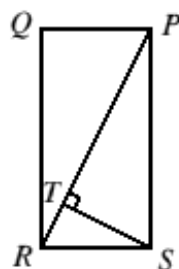14. The diagram shows a rectangle $PQRS$ in which $PQ : QR = 1 : 2$. The point T on PR is such that ST is perpendicular to PR. What is the ratio of the area of the triangle RST to the area of the rectangle $PQRS$?

A $1 : 4\sqrt{2}$ B $1 : 6$ C $1 : 8$

D $1 : 10$ E $1 : 12$

14.   **D**   Triangle RST is similar to triangle RPS as their corresponding angles are equal. Using Pythagoras' Theorem, the ratio of RS to RP is $1 : \sqrt{5}$. So the ratio of RT to RS is also $1 : \sqrt{5}$. Therefore the ratio of the area of the triangle RST to the area of triangle RPS is $1 : 5$. Triangle RPS is half the rectangle $PQRS$, so the ratio of the area of triangle RST to the area of rectangle $PQRS$ is $1 : 10$.