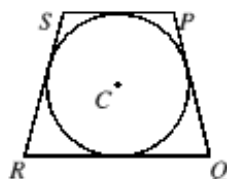




20. In trapezium $PQRS$, $SR = PQ = 25\text{cm}$ and SP is parallel to RQ . All four sides of $PQRS$ are tangent to a circle with centre C . The area of the trapezium is 600cm^2 . What is the radius of the circle?

A 7.5cm B 8cm C 9cm D 10cm E 12cm



1290



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20. **E** The two tangents drawn from a point outside a circle to that circle are equal in length. This theorem has been used to mark four pairs of equal line segments on the diagram. In the circle the diameter, XY , has been marked. It is also a perpendicular height of the trapezium. We are given that $SR = PQ = 25\text{ cm}$ so we can deduce that $(a + d) + (b + c) = 25 + 25 = 50$. The area of trapezium $PQRS = \frac{1}{2}(SP + QR) \times XY = 600\text{ cm}^2$. Therefore $\frac{1}{2}(a + b + c + d) \times 2r = 600$. So $\frac{1}{2} \times 50 \times 2r = 600$, i.e. $r = 12$.

