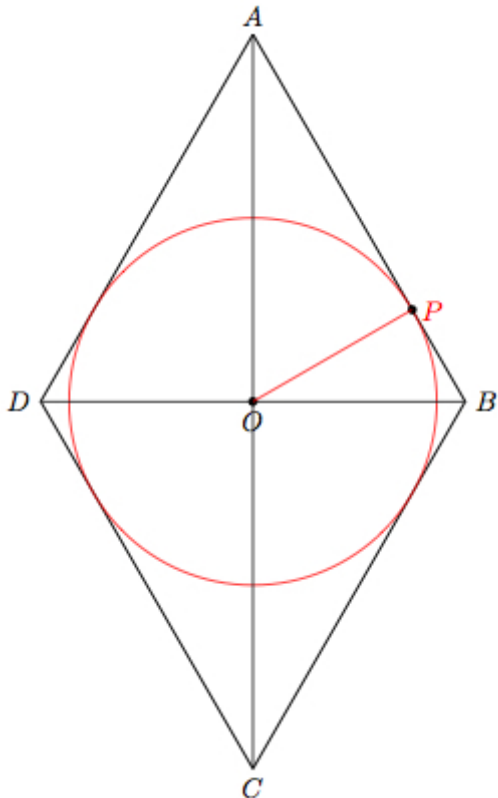


September 23rd

The lengths of the diagonals of a rhombus are 20cm and 30cm.

Find the length of the radius of the inscribed circle.



In triangle OAB, $OA = 15\text{cm}$, $OB = 10\text{cm}$

Therefore, by Pythagoras $AB = 5\sqrt{13}\text{ cm}$

Triangle OBP is similar to OAB

(since they share a common angle ABO and both have a right angle)

Therefore the ratios $OA:AB = OP:OB$

$$15: 5\sqrt{13} = r:10$$

$$r = 150 \div 5\sqrt{13} = \frac{30\sqrt{13}}{13} \approx \mathbf{8.32\text{cm}}$$