

FHK is a tangent to the larger circle.

1. Name three other angles each equal to $\angle E_1$. (6)

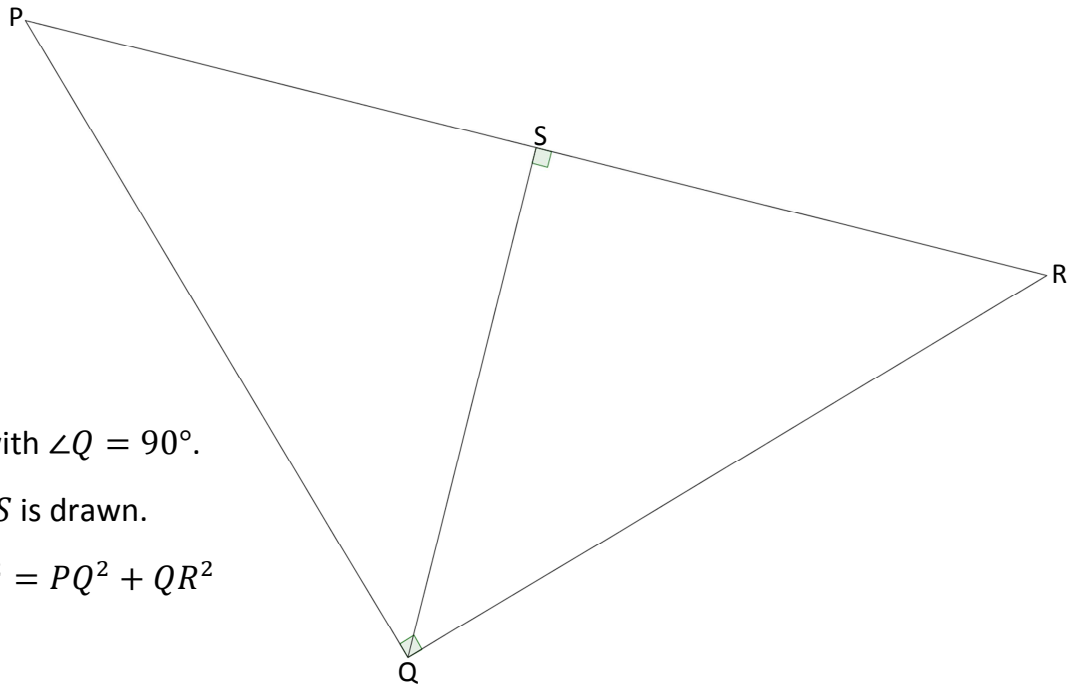
2. Prove that $FH = FG$. (2)

3. Prove that $\triangle FEH \sim \triangle FHD$. (4)

4. Prove that $GF^2 = FE \cdot FD$.

5. If $FD = 8$, $DH = 5$ and $HE = 6$, calculate FH

SOWETO SCIENCE CENTER POST TEST



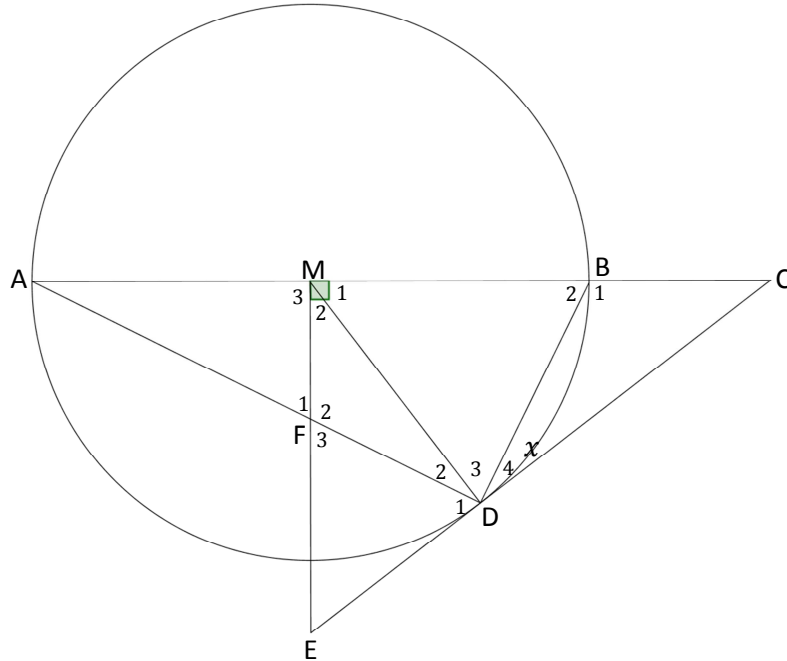
Given $\triangle PQR$ with $\angle Q = 90^\circ$.

The altitude QS is drawn.

Show that $PR^2 = PQ^2 + QR^2$

SOWETO SCIENCE CENTRE PRE-TEST

In the diagram, M is the centre of the circle and diameter AB is produced to C . ME is drawn perpendicular to AC such that CDE is a tangent to the circle at D . ME and chord AD intersect at F . $MB = 2BC$



1. If $\angle D_4 = x$, write down, with reasons, TWO other angles each equal to x . (3)

2. Prove that CM is a tangent at M to the circle passing through M , E and D . (4)

3. Prove that FMBD is a cyclic quadrilateral. (3)

4. Prove that $DC^2 = 5BC^2$. (3)

5. Prove that $\triangle DBC \sim \triangle DFM$. (4)

6. Hence, determine the value of $\frac{DM}{FM}$. (2)