

AQA Level 2 Certificate

FURTHER MATHEMATICS

Level 2 (8360)

Worksheet 2

Geometric Problems and Proof

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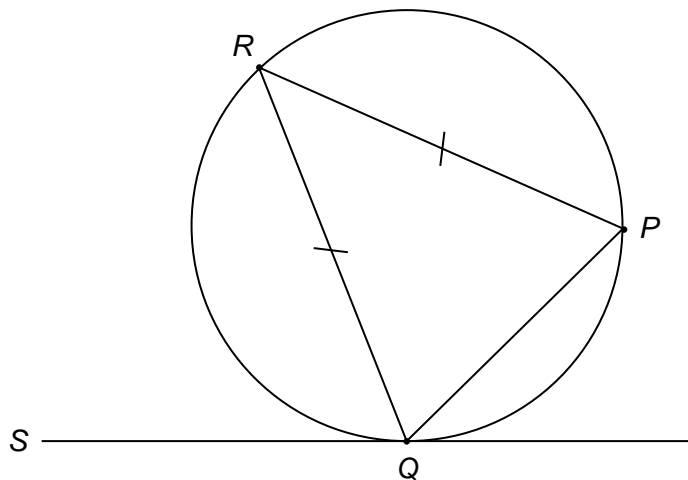
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2 Geometric Problems and Proof

Question 1

SQ is a tangent to the circle at Q .

$PR = QR$



Not drawn accurately

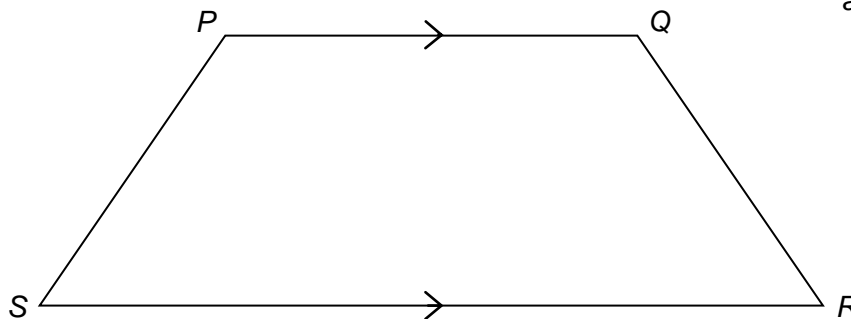
Prove that RQ bisects angle PQS .

(3 marks)

Question 2

$PQRS$ is a trapezium.

Angle $PSR =$ angle QRS



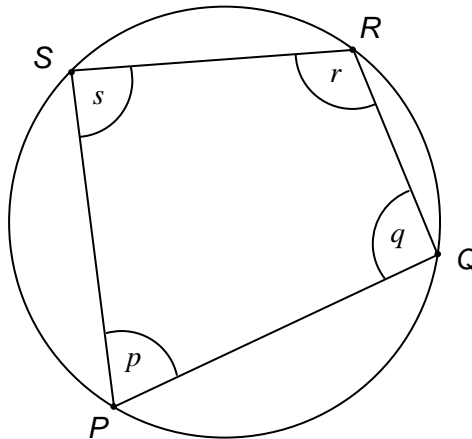
Not drawn accurately

Prove that $PQRS$ is a cyclic quadrilateral.

(3 marks)

Question 3

$$p : q : r = 4 : 6 : 5$$



Not drawn accurately

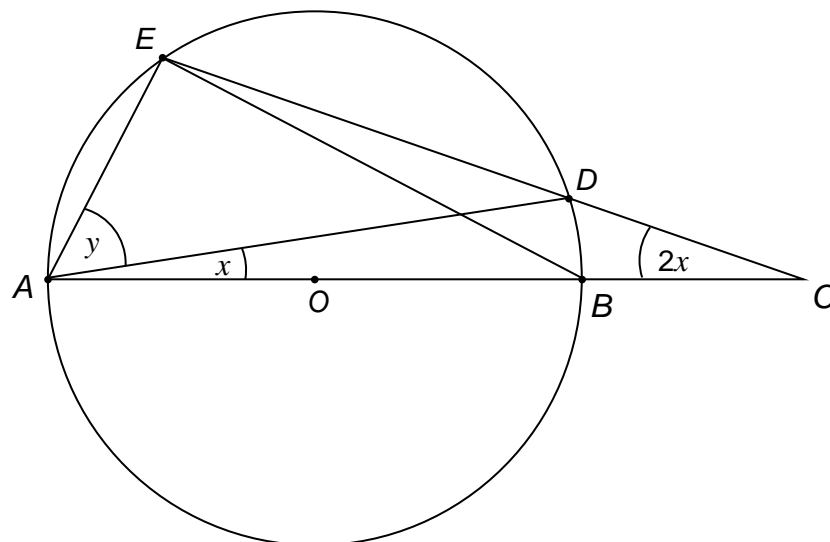
Work out s .

(5 marks)

Question 4

O is the centre of the circle.

$AOBC$ and EDC are straight lines.



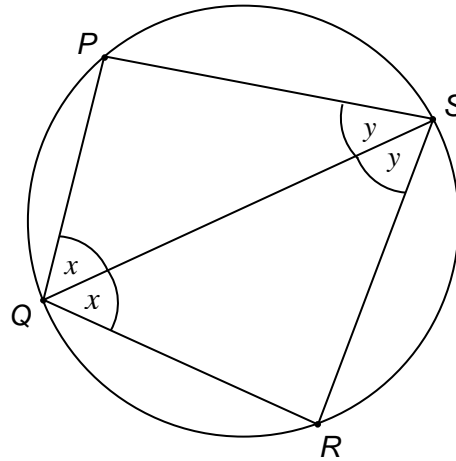
Not drawn accurately

Prove that $4x + y = 90$

(4 marks)

Question 5

QS bisects both of the angles PSR and PQR .



Not drawn accurately

Prove that QS is a diameter of the circle.

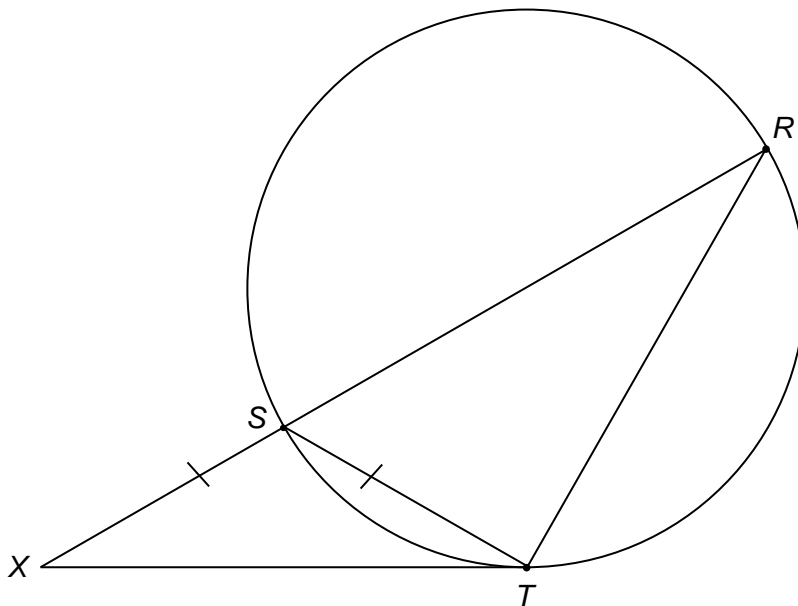
(4 marks)

Question 6

RSX is a straight line.

XT is a tangent to the circle at T .

$SX = ST$



Not drawn accurately

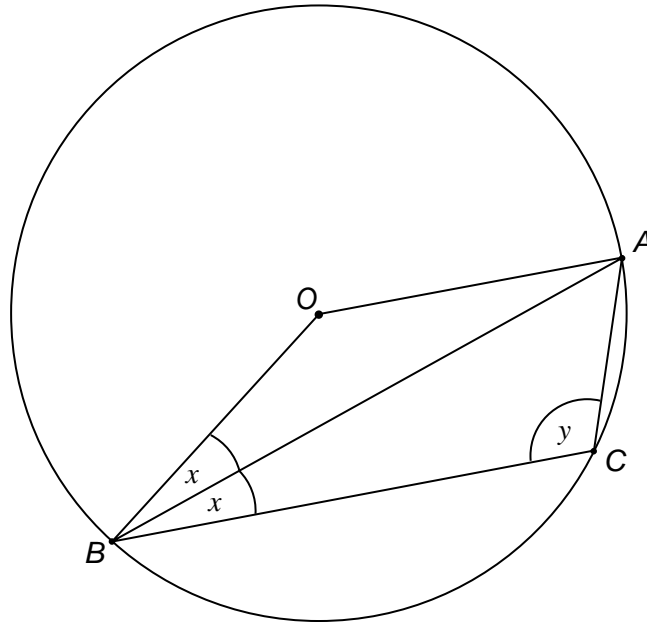
Prove that triangle RXT is isosceles.

(3 marks)

Question 7

O is the centre of the circle.

AB bisects angle OBC .



Not drawn accurately

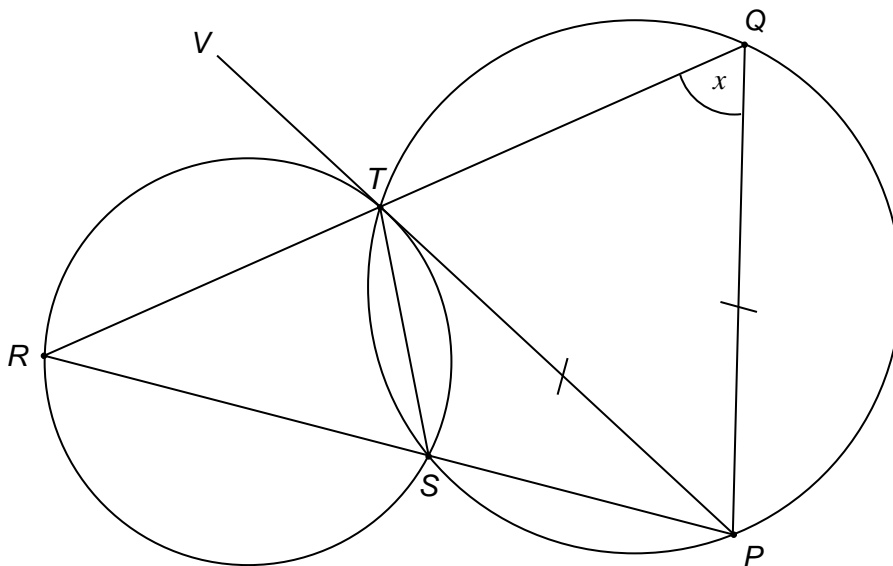
Prove that $y = 90 + x$

(5 marks)

Question 8

RTQ , RSP and PTV are all straight lines.

$PT = PQ$



Not drawn accurately

Prove that PTV is a tangent to circle RST at T

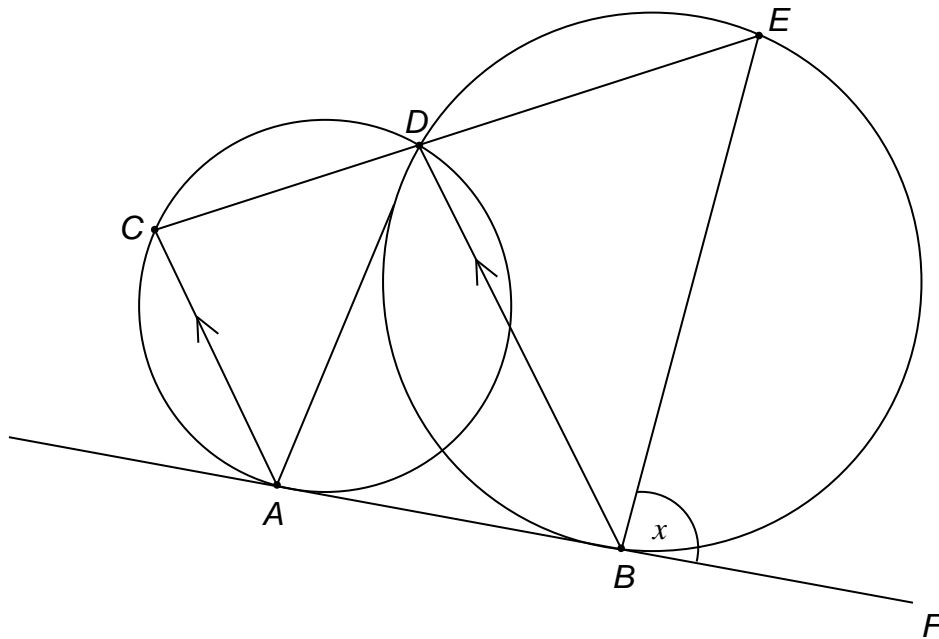
(5 marks)

Question 9

ABF is a common tangent to the two circles at A and B .

CDE is a straight line.

AC is parallel to BD .



Not drawn accurately

Prove that AD is parallel to BE .

(5 marks)