HIGHER

3.5 Circle Theorems: Angle Properties: 10-minute Pack

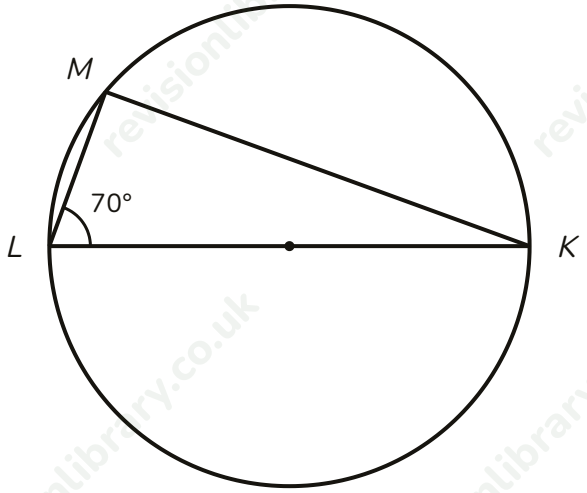
Total Marks

EDEXCEL 4MA1 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 KL is a diameter of a circle. M is a point on the circle.
Angle KLM = 70 degrees. Find angle LKM. Give reasons.



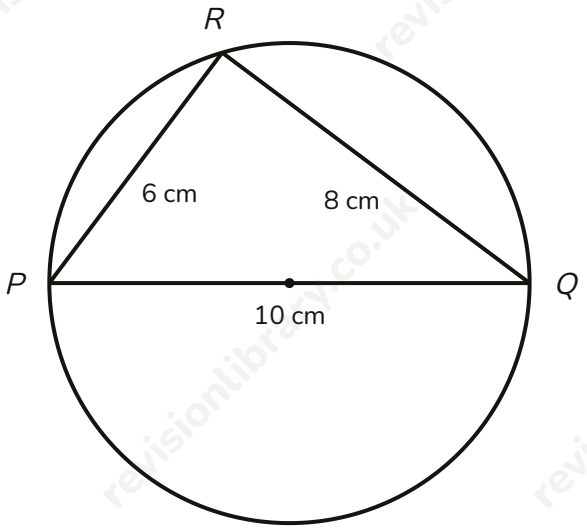
(Total for Question 1 is 3 marks)

2 In a circle, points A, B, C, D lie on the circumference with arc AB fixed. Angles ACB and ADB are given as equal. State the theorem that explains why these two angles are equal.

(Total for Question 2 is 1 mark)

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3 A circle has diameter PQ = 10 cm. Point R lies on the circle with PR and RQ forming the triangle PRQ in the semicircle. Calculate PR times RQ if PR = 6 cm and RQ = 8 cm and state the angle in a semicircle result for angle PRQ.



(Total for Question 3 is 2 marks)

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4 In circle with centre O, tangent at T meets the circle at T and radius OT is drawn. Give a reason why OT is perpendicular to the tangent at T and name the theorem used.

(Total for Question 4 is 2 marks)

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Mark scheme · 3.5 Circle Theorems: Angle Properties: 10-minute Pack

Question 1

angle KML = 90 degrees (angle in a semicircle)	**B1**
angles in a triangle add to 180: 180 - 90 - 70	**M1**
angle LKM = 20 degrees	**A1**

Answer: Angle LKM = 20 degrees

Question 2

angles in the same segment theorem named, cao	**B1**

Answer: Angles in the same segment are equal

Question 3

multiplies 6 and 8 to get 48 or states right angle using semicircle theorem	**M1**
answers: product 48 and angle PRQ = 90 degrees, both correct and theorem named	**A1**

Answer: PR times RQ = 48, angle PRQ = 90 degrees

Question 4

states OT is perpendicular to tangent because radius to point of contact is perpendicular to tangent	**B1**
names theorem: tangent is perpendicular to radius at point of contact	**B1**

Answer: OT is perpendicular to the tangent at T because the radius to the point of contact is perpendicular to the tangent, theorem named

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