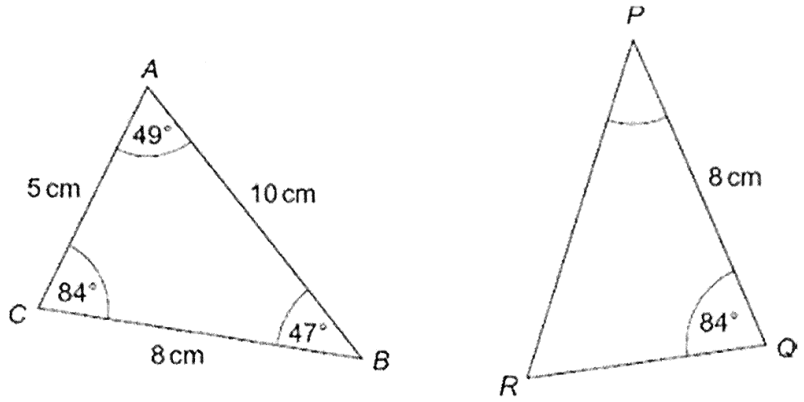
End of Unit Test Name: Answers

Lines, Angles and Shapes - HIGHER

1. These two triangles are congruent. Not drawn accurately



(a) What is the size of angle *P*? Circle your answer.

47° 49° 84° none of these

(1)

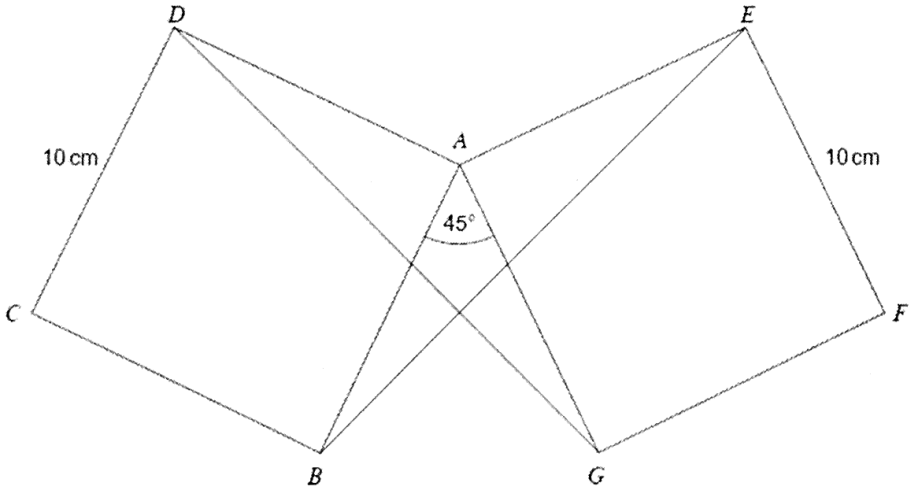
(b) What is the length of *PR*? Circle your answer.

5 cm 8 cm 10 cm none of these

(1)

(Total 2 marks)

2. *ABCD* and *AEFG* are identical squares. *CD* = *EF* = 10 cm. Angle *BAG* = 45°. Not drawn accurately.



Prove that triangles *AGD* and *ABE* are congruent.

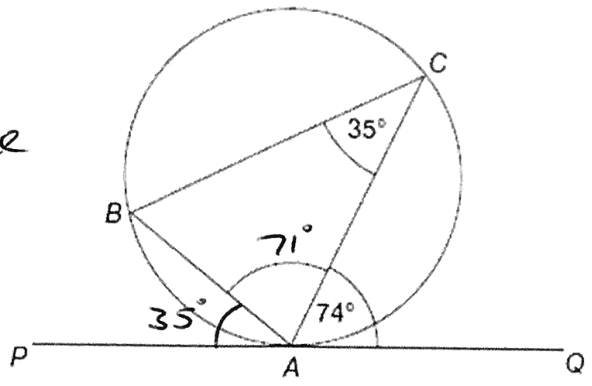
AD = AG = AE = AB because sides of square are equal.

Angles DAG = BAE = 90° + 45° = 135° because all angles in a square are 90°.

Side-angle-side proves congruence

(Total 4 marks)

3. *A*, *B* and *C* are points on a circle. *PAQ* is a tangent to the circle. Not drawn accurately. Work out the size of angle *CAB*.



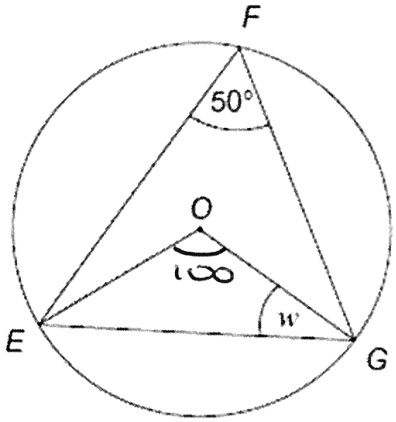
PAB = 35° by the alternate segment theorem.

BAC = 180 − (35 + 74) = 71°

Answer 71 degrees

(Total 3 marks)

4. (a) *E*, *F* and *G* are points on a circle, centre *O*. Not drawn accurately. Work out the size of angle *w*.



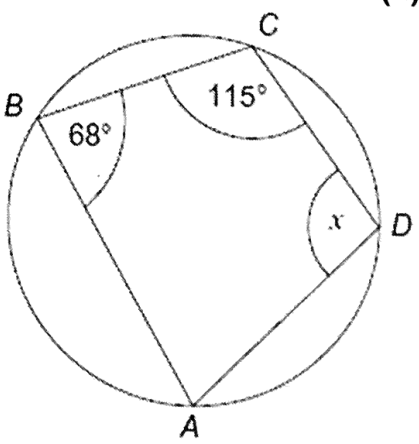
EOG = 100°

$w = \frac{180 - 100}{2} = 40°$

Answer 40 degrees

(2)

(b) *A*, *B*, *C* and *D* are points on the circumference of the circle. Not drawn accurately. Work out the size of angle *x*. Give a reason for your answer.



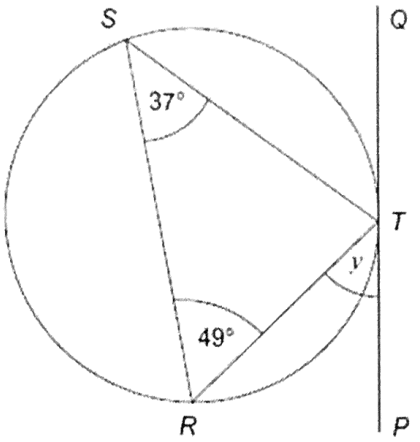
180 − 68 = 112°

Answer 112 degrees

Reason Opposite angles in a cyclic quadrilateral sum to 180°.

(2)

(c) *PTQ* is a tangent to the circle. *R*, *S* and *T* are points on the circle. Not drawn accurately. Write down the size of angle *y*. Give a reason for your answer.



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Answer ....37.....degrees

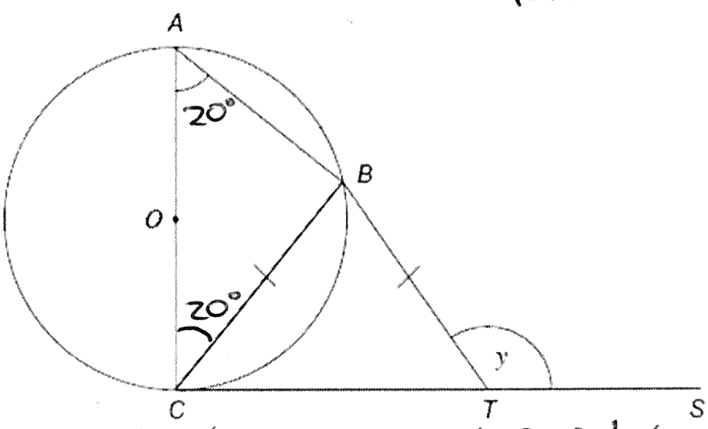
Reason ....Angles in alternate segments are.....

....equal.....

(2)

(Total 6 marks)

5. *AC* is a diameter of a circle, centre *O*. *CTS* is a tangent to the circle. *B* is a point on the circumference of the circle such that *BC* = *BT*. Angle *BTS* = *y*. Not drawn accurately



(a) Prove that angle *CAB* = 180° – *y*. Give reasons for any angles you write down or calculate.

BTC = 180°-y because angles on a straight.....

line sum to 180°.....

BCT = 180°-y because isosceles have equal angles.

CAB = 180°-y because angles in alternate.....

segments are equal.....

(3)

(b) You are given that angle *ACB* = 20°. Work out the value of *y*. You **must** show your working which may be on the diagram.

180 - 20 = 160.....

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Answer .....160..... degrees

(2)

(Total 5 marks)

(Total for test = 20 marks)