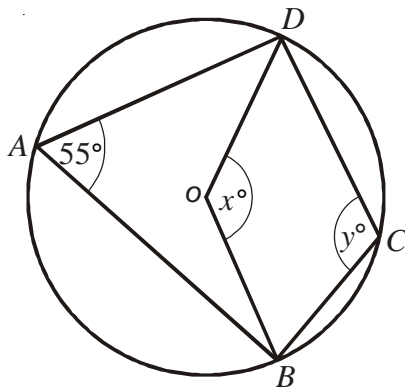


1)



In the diagram, A , B , C , and D are points on the circumference of a circle, centre O .

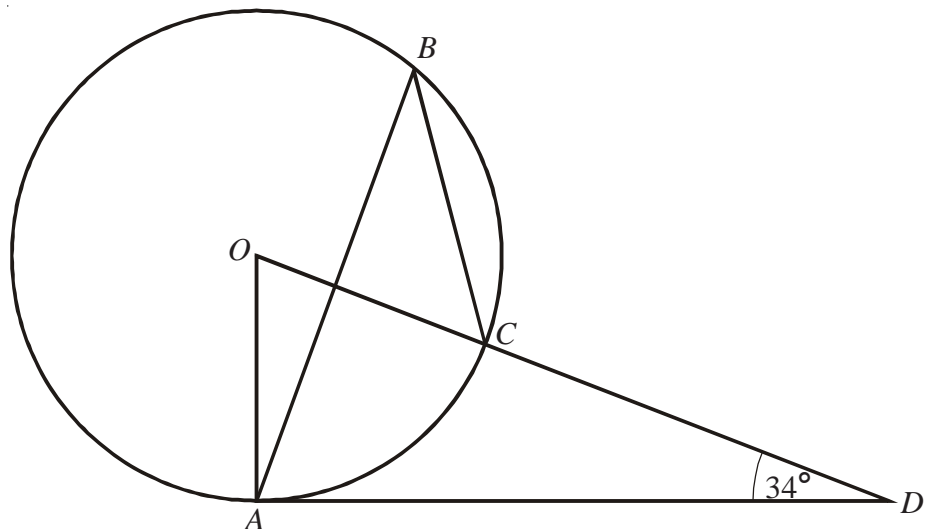
Angle $BAD = 55^\circ$.

Angle $BOD = x^\circ$.

Angle $BCD = y^\circ$.

- a) (i) Work out the value of x .
(ii) Give a reason for your answer.
- b) (i) Work out the value of y .
(ii) Give a reason for your answer.

2)



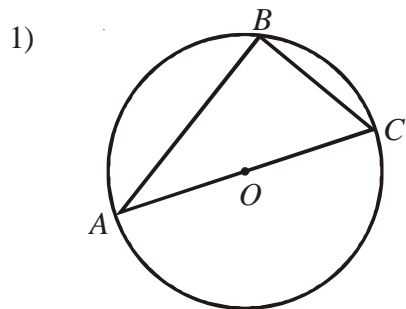
The diagram shows a circle centre O .

A , B and C are points on the circumference.

DCO is a straight line and DA is a tangent to the circle.

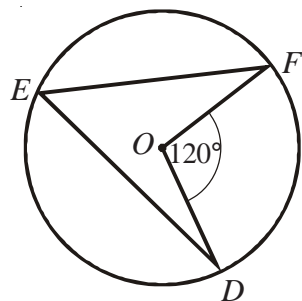
Angle $ADO = 34^\circ$

- a) Work out the size of angle AOD .
- b) (i) Work out the size of angle ABC .
(ii) Give a reason for your answer.



A , B and C are points on the circumference of a circle centre O .
 AC is a diameter of the circle.

- a) (i) Write down the size of angle ABC .
(ii) Give a reason for your answer.

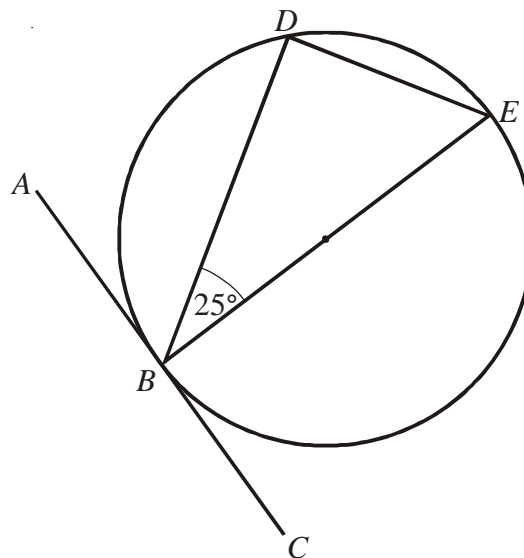


D , E and F are points on the circumference of a circle, centre O .
Angle $DOF = 120^\circ$.

- b) (i) Work out the size of angle DEF .
(ii) Give a reason for your answer.

- 2) B , D and E are points on a circle centre O .
 ABC is a tangent to the circle.
 BE is a diameter of the circle.
Angle $DBE = 25^\circ$.

- a) Find the size of angle ABD .
Give a reason for your answer.
- b) Find the size of angle DEB .
Give a reason for your answer.



Circle Theorems

- 1) In the diagram, A , B and C are points on the circumference of a circle, centre O . PA and PB are tangents to the circle. Angle $ACB = 72^\circ$.

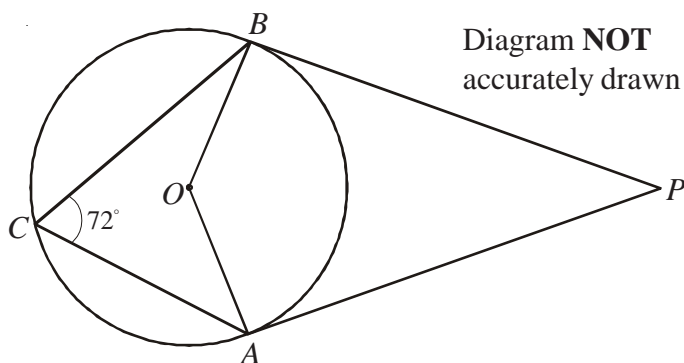


Diagram **NOT** accurately drawn

- a) (i) Work out the size of angle AOB .
 (ii) Give a reason for your answer.
- b) Work out the size of angle APB .

- 2) P , Q , R and S are points on the circle. PQ is a diameter of the circle. Angle $RPQ = 32^\circ$.

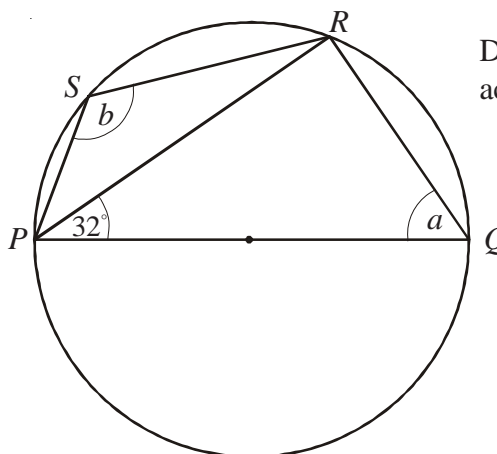


Diagram **NOT** accurately drawn

- a) (i) Work out the size of angle PQR .
 (ii) Give reasons for your answer.
- b) (i) Work out the size of angle PSR .
 (ii) Give a reason for your answer.

- 3) The diagram shows a circle, centre O . AC is a diameter. Angle $BAC = 31^\circ$. D is a point on AC such that angle BDA is a right angle.

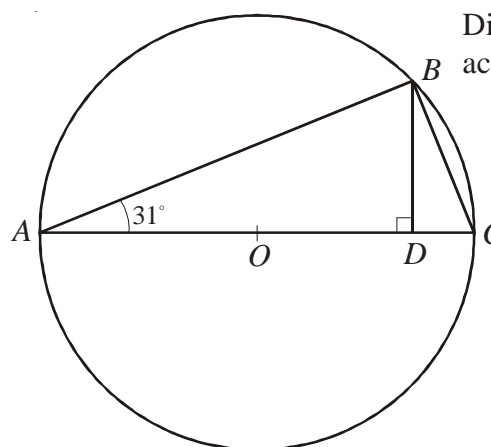


Diagram **NOT** accurately drawn

- a) Work out the size of angle BCA .
 Give reasons for your answer.
- b) Calculate the size of angle DBC .
- c) Calculate the size of angle BOA .

- 4) A , B , C and D are four points on the circumference of a circle. ABE and DCE are straight lines. Angle $BAC = 21^\circ$. Angle $EBC = 58^\circ$.

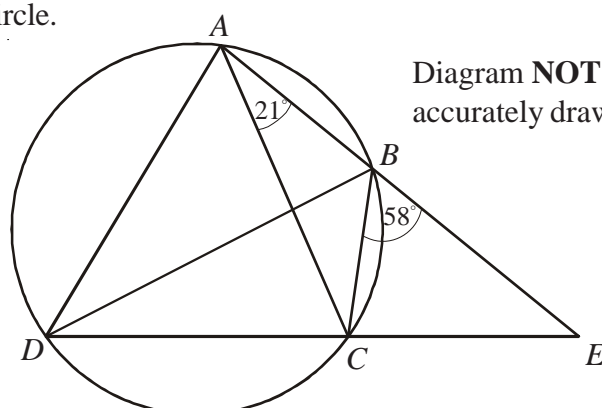


Diagram **NOT** accurately drawn

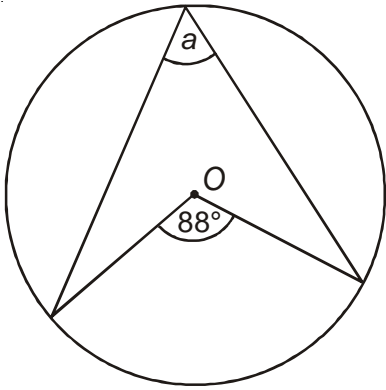
- a) Find the size of angle ADC .
- b) Find the size of angle ADB .

Angle $CAD = 69^\circ$.

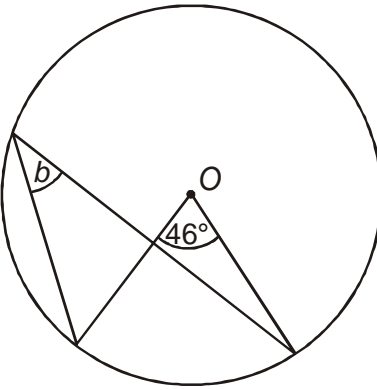
- c) Is BD a diameter of the circle?
 You must explain your answer.

Circle Theorems

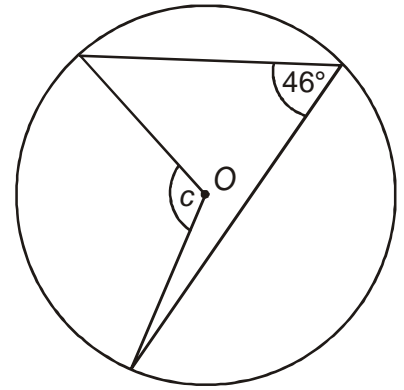
1) $a = \underline{\hspace{2cm}}$



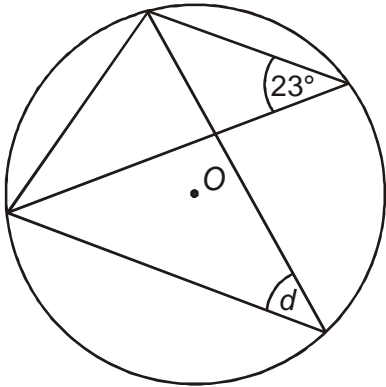
2) $b = \underline{\hspace{2cm}}$



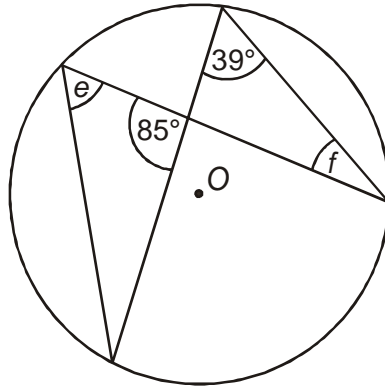
3) $c = \underline{\hspace{2cm}}$



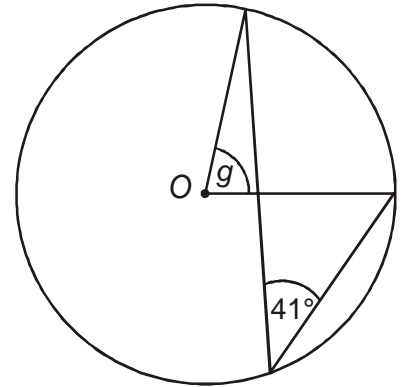
4) $d = \underline{\hspace{2cm}}$



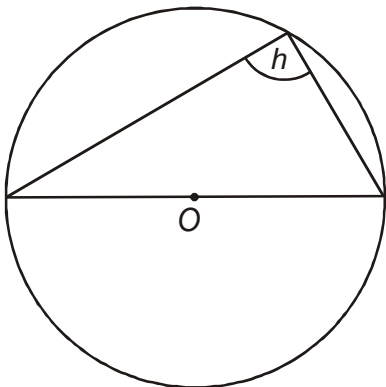
5) $e = \underline{\hspace{2cm}}$ $f = \underline{\hspace{2cm}}$



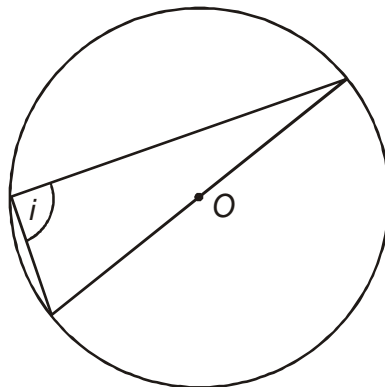
6) $g = \underline{\hspace{2cm}}$



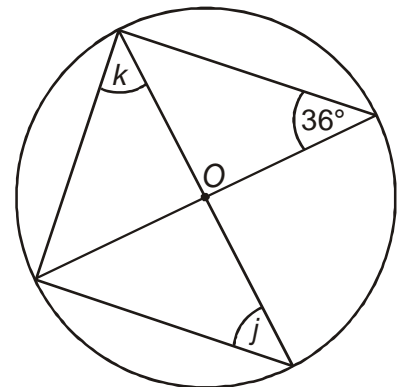
7) $h = \underline{\hspace{2cm}}$



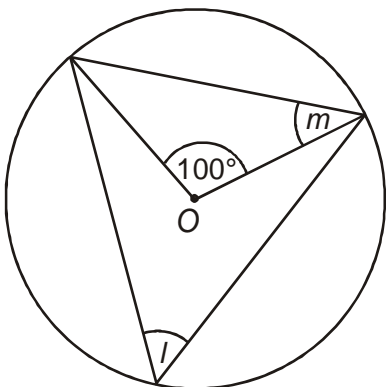
8) $i = \underline{\hspace{2cm}}$



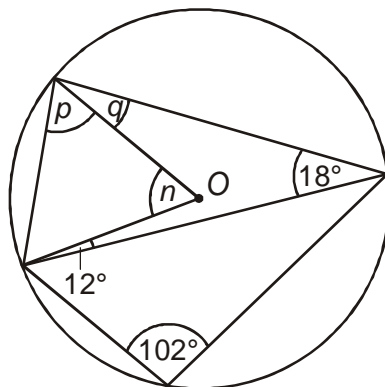
9) $j = \underline{\hspace{2cm}}$ $k = \underline{\hspace{2cm}}$



10) $l = \underline{\hspace{2cm}}$ $m = \underline{\hspace{2cm}}$

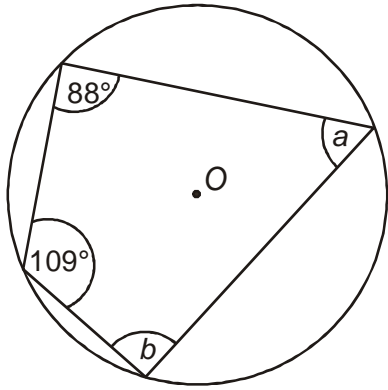


11) $n = \underline{\hspace{2cm}}$ $p = \underline{\hspace{2cm}}$ $q = \underline{\hspace{2cm}}$

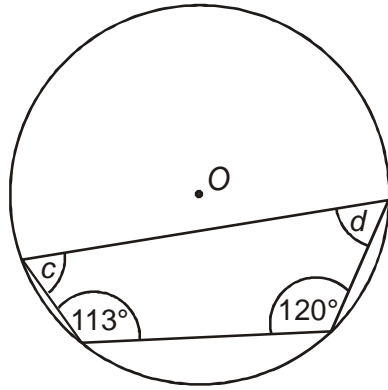


Circle Theorems

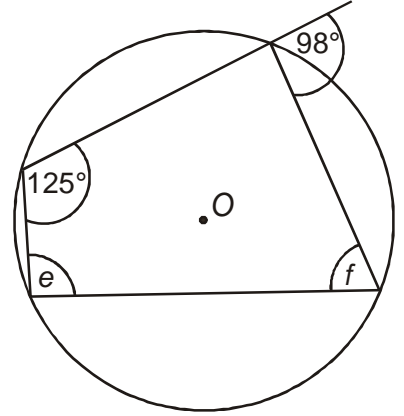
1) $a = \underline{\hspace{1cm}}$ $b = \underline{\hspace{1cm}}$



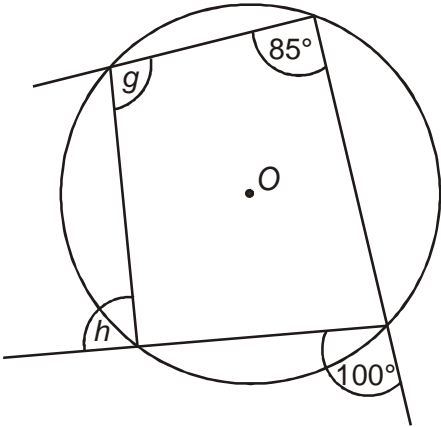
2) $c = \underline{\hspace{1cm}}$ $d = \underline{\hspace{1cm}}$



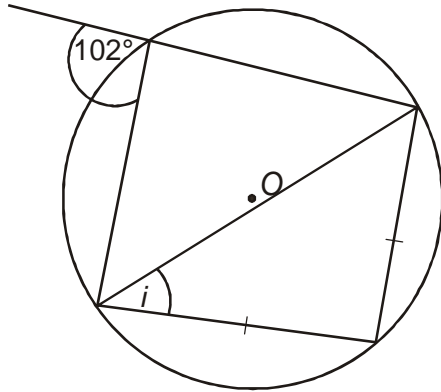
3) $e = \underline{\hspace{1cm}}$ $f = \underline{\hspace{1cm}}$



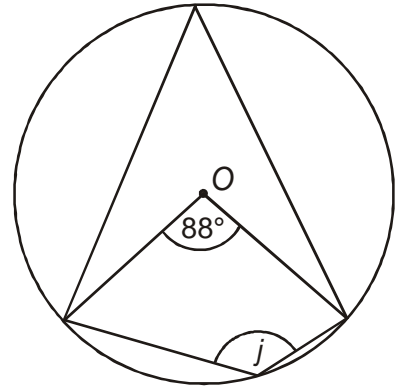
4) $g = \underline{\hspace{1cm}}$ $h = \underline{\hspace{1cm}}$



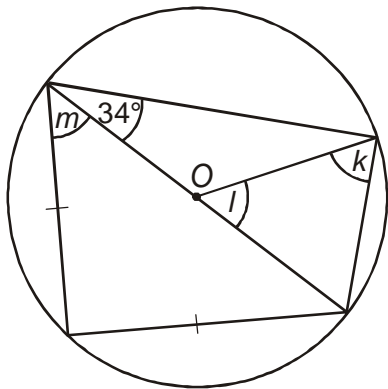
5) $i = \underline{\hspace{1cm}}$



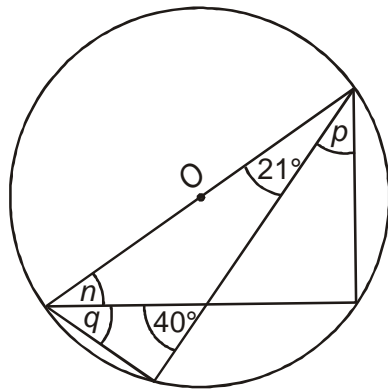
6) $j = \underline{\hspace{1cm}}$



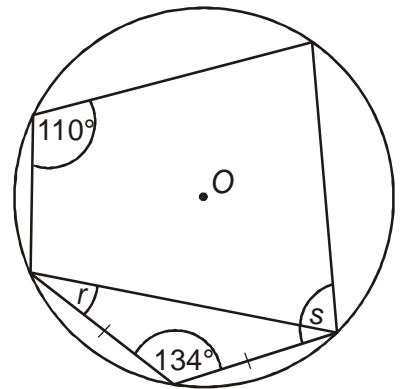
7) $k = \underline{\hspace{1cm}}$ $l = \underline{\hspace{1cm}}$ $m = \underline{\hspace{1cm}}$



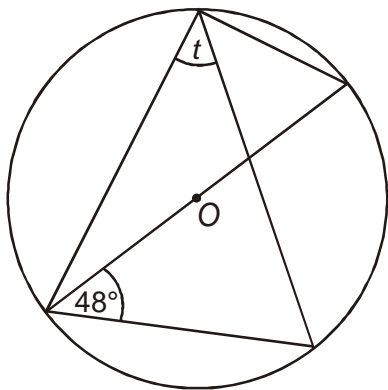
8) $n = \underline{\hspace{1cm}}$ $p = \underline{\hspace{1cm}}$ $q = \underline{\hspace{1cm}}$



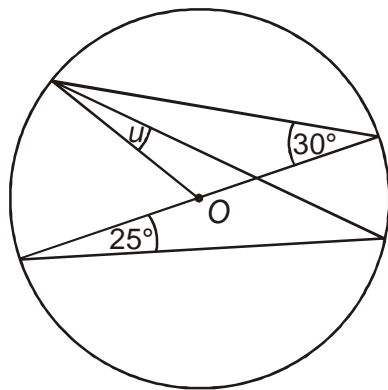
9) $r = \underline{\hspace{1cm}}$ $s = \underline{\hspace{1cm}}$



10) $t = \underline{\hspace{1cm}}$

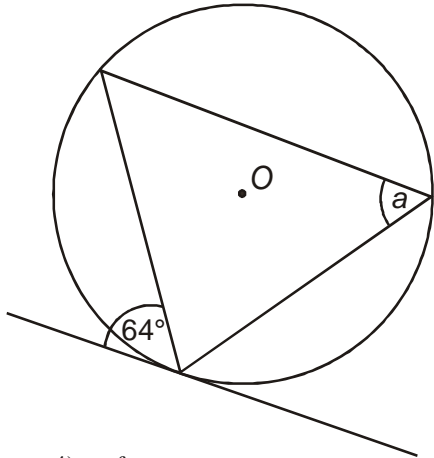


11) $u = \underline{\hspace{1cm}}$

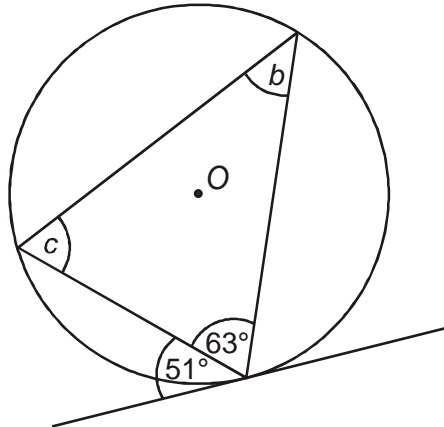


Circle Theorems

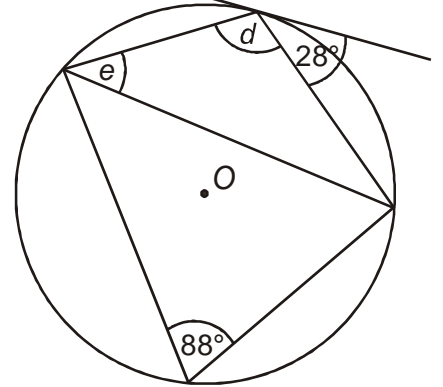
1) $a = \underline{\hspace{2cm}}$



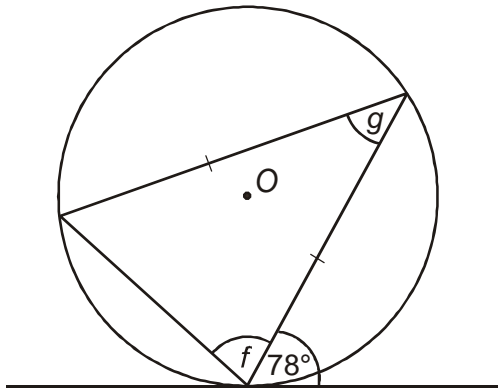
2) $b = \underline{\hspace{2cm}}$ $c = \underline{\hspace{2cm}}$



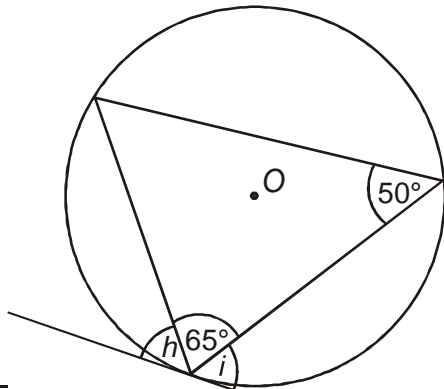
3) $d = \underline{\hspace{2cm}}$ $e = \underline{\hspace{2cm}}$



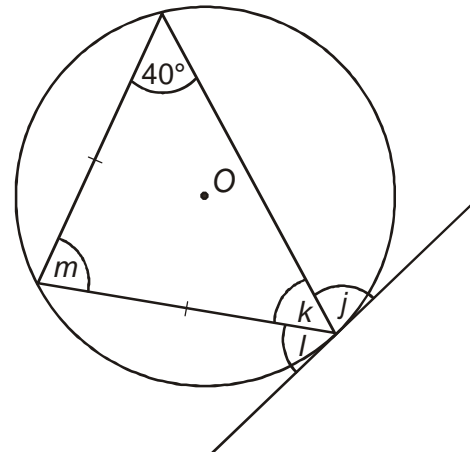
4) $f = \underline{\hspace{2cm}}$ $g = \underline{\hspace{2cm}}$



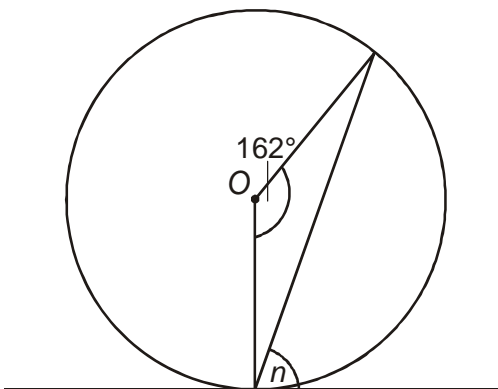
5) $h = \underline{\hspace{2cm}}$ $i = \underline{\hspace{2cm}}$



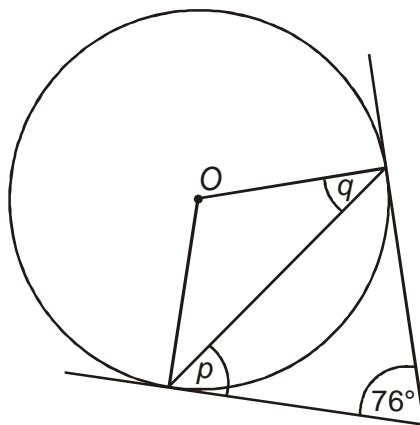
6) $j = \underline{\hspace{2cm}}$ $k = \underline{\hspace{2cm}}$ $l = \underline{\hspace{2cm}}$ $m = \underline{\hspace{2cm}}$



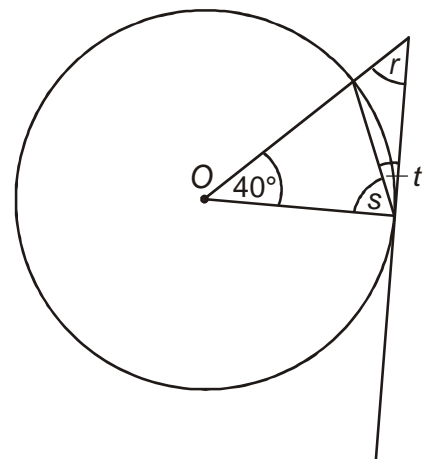
7) $n = \underline{\hspace{2cm}}$



8) $p = \underline{\hspace{2cm}}$ $q = \underline{\hspace{2cm}}$



9) $r = \underline{\hspace{2cm}}$ $s = \underline{\hspace{2cm}}$ $t = \underline{\hspace{2cm}}$



10) $u = \underline{\hspace{2cm}}$ $v = \underline{\hspace{2cm}}$ $w = \underline{\hspace{2cm}}$

