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°.

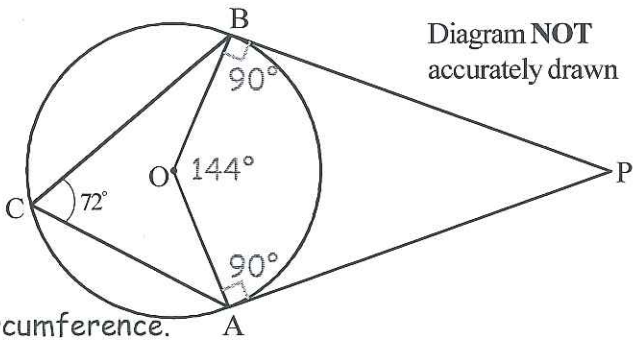

Diagram **NOT** accurately drawn

a) (i) Work out the size of angle AOB. 144°

(ii) Give a reason for your answer.
Angle at centre is twice angle on circumference.

b) Work out the size of angle APB. 36°

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2) P, Q, R and S are points on the circle.
PQ is a diameter of the circle.
Angle RPQ = 32°.

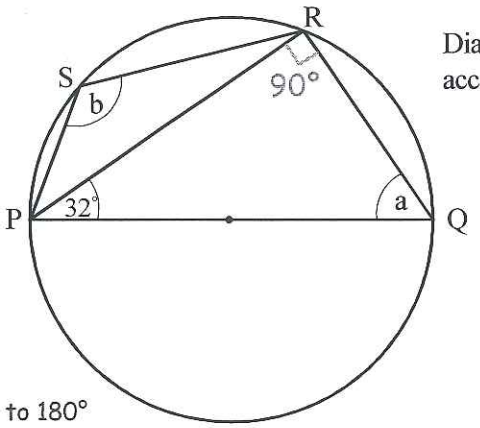

Diagram **NOT** accurately drawn

a) (i) Work out the size of angle PQR. 58°

(ii) Give reasons for your answer.
Angle in semi-circle is 90°
Angles in triangle add to 180°

b) (i) Work out the size of angle PSR. 122°

(ii) Give a reason for your answer.
Opposite angles of a cyclic quadrilateral add to 180°

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

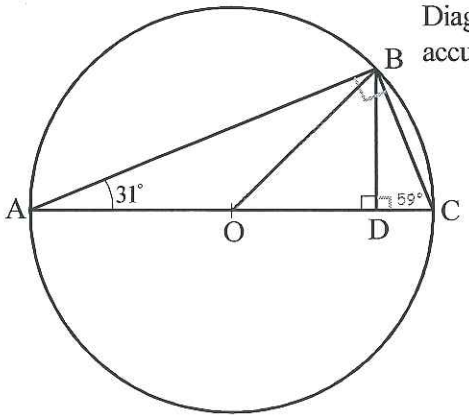

Diagram **NOT** accurately drawn

a) Work out the size of angle BCA. 59°
Give reasons for your answer.
Angle in semi-circle is 90°
Angles in triangle add to 180°

b) Calculate the size of angle DBC. 31°

c) Calculate the size of angle BOA. 118°

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

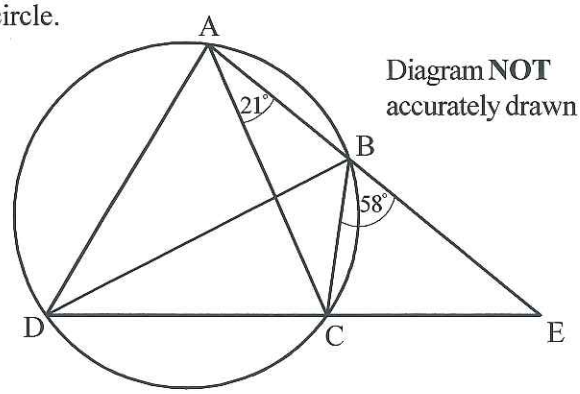


Diagram **NOT** accurately drawn

a) Find the size of angle ADC. 58°

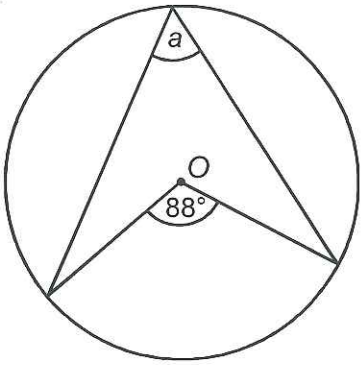
b) Find the size of angle ADB. 37°

Angle CAD = 69°.

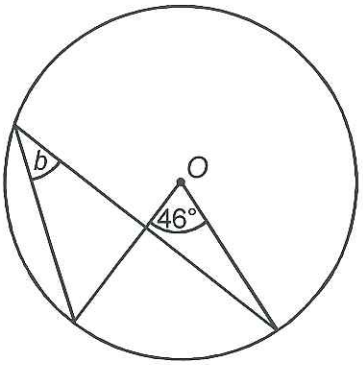
c) Is BD a diameter of the circle? Yes
You must explain your answer.
Angle DAB = 69° + 21° = 90°
BD subtends 90° on the circumference. Therefore BD is a diameter.

Circle Theorems

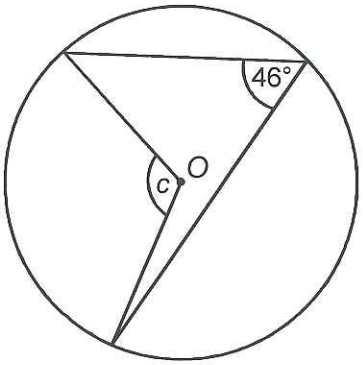
1) $a = 44°$



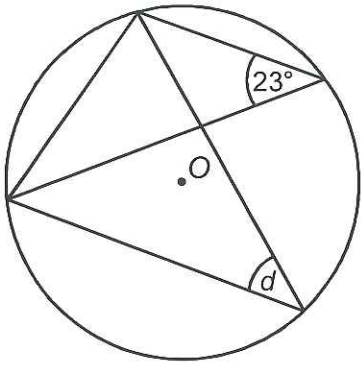
2) $b = 23°$



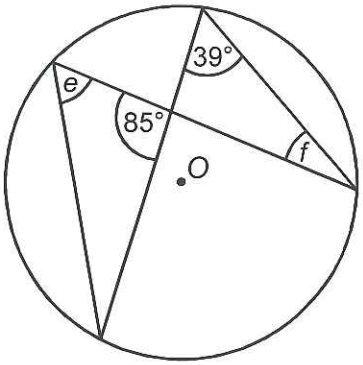
3) $c = 92°$



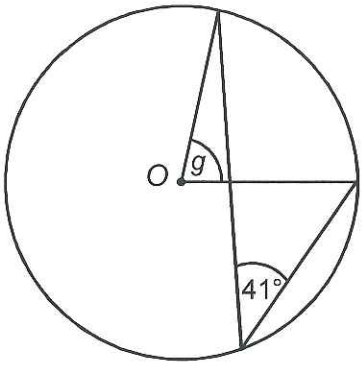
4) $d = 23°$



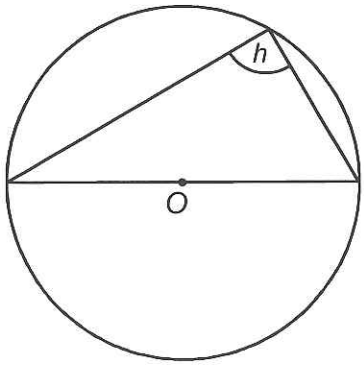
5) $e = 39°$ $f = 56°$



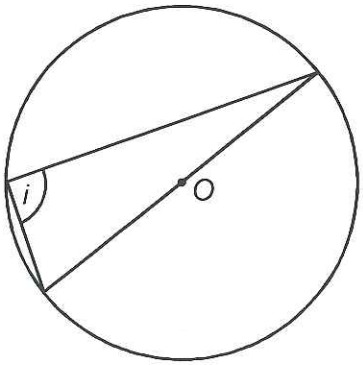
6) $g = 82°$



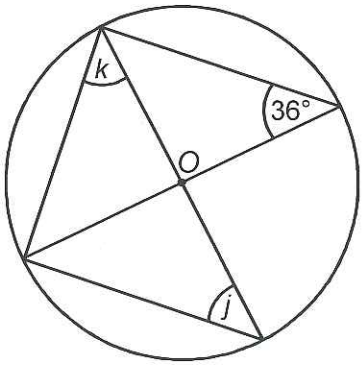
7) $h = 90°$



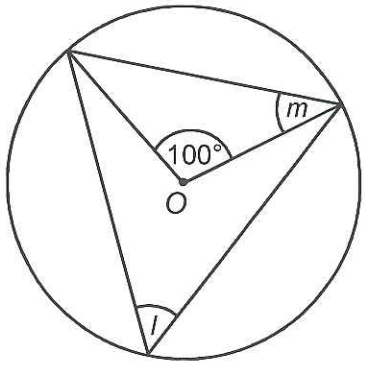
8) $i = 90°$



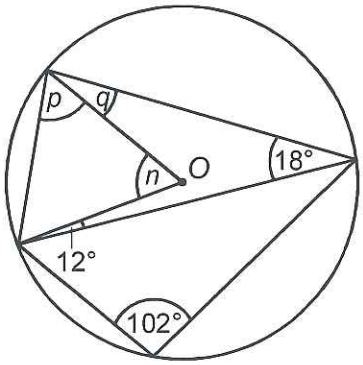
9) $j = 36°$ $k = 54°$



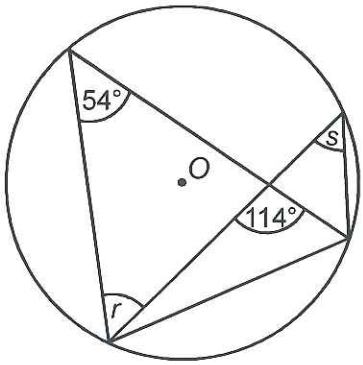
10) $l = 50°$ $m = 40°$



11) $n = 36°$ $p = 72°$ $q = 6°$

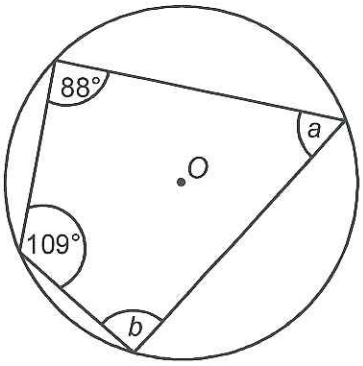


12) $r = 60°$ $s = 54°$

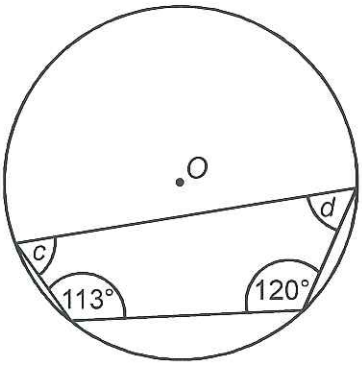


Circle Theorems

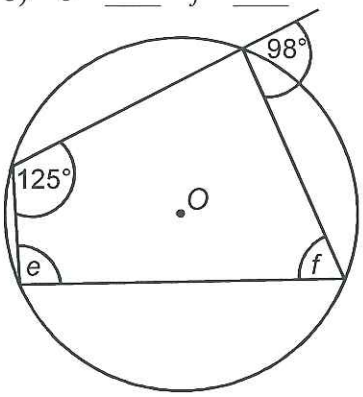
1) $a = \underline{71°}$ $b = \underline{92°}$



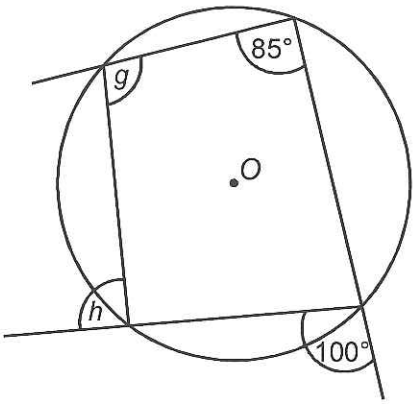
2) $c = \underline{60°}$ $d = \underline{67°}$



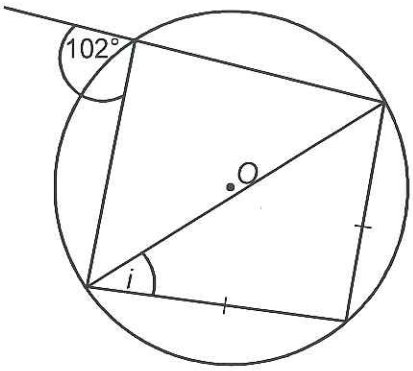
3) $e = \underline{98°}$ $f = \underline{55°}$



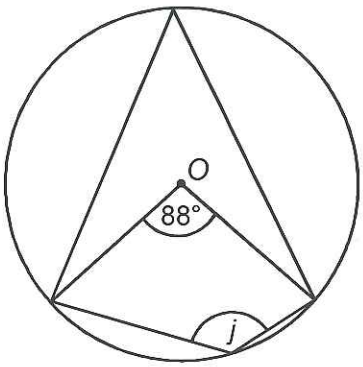
4) $g = \underline{100°}$ $h = \underline{85°}$



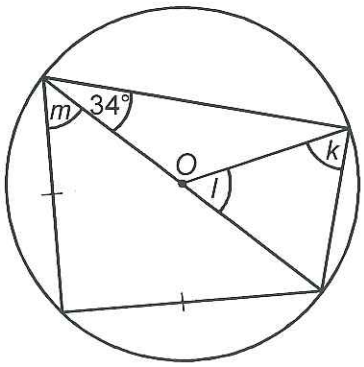
5) $i = \underline{39°}$



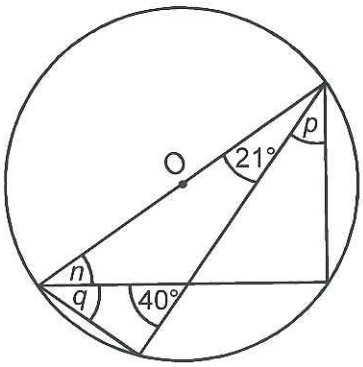
6) $j = \underline{136°}$



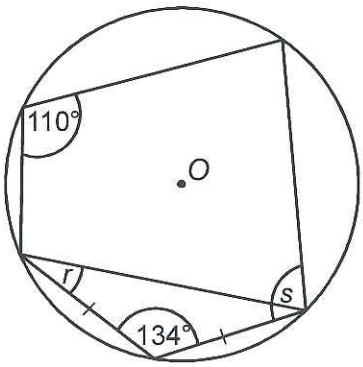
7) $k = \underline{56°}$ $l = \underline{68°}$ $m = \underline{45°}$



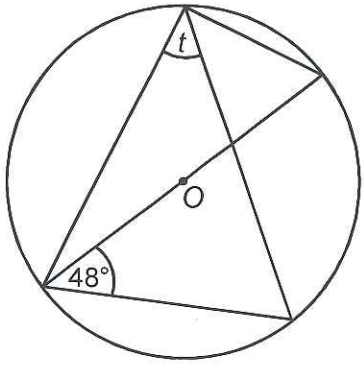
8) $n = \underline{19°}$ $p = \underline{50°}$ $q = \underline{50°}$



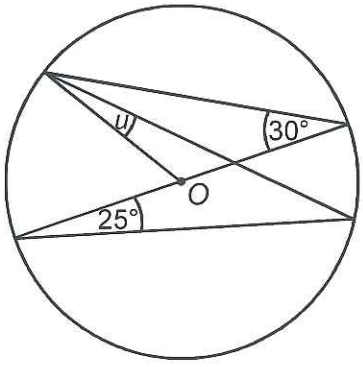
9) $r = \underline{23°}$ $s = \underline{93°}$



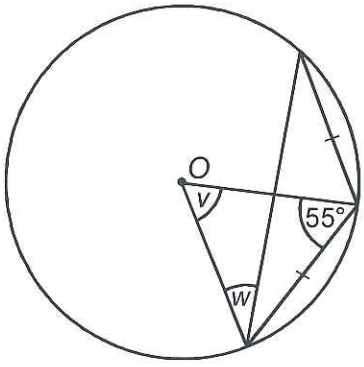
10) $t = \underline{42°}$



11) $u = \underline{5°}$

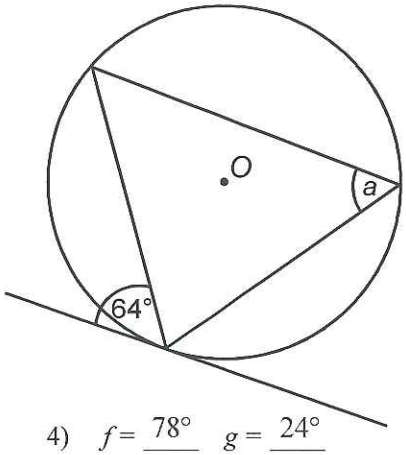


12) $v = \underline{70°}$ $w = \underline{20°}$

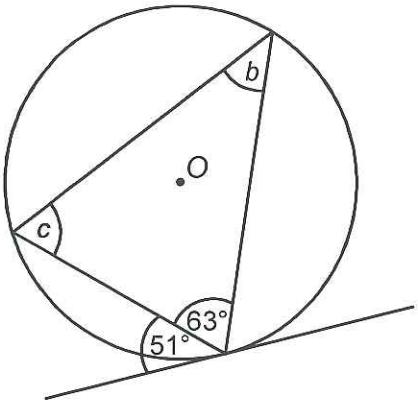


Circle Theorems

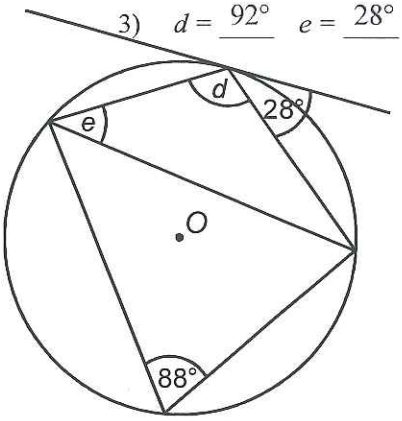
1) $a =$ 64°



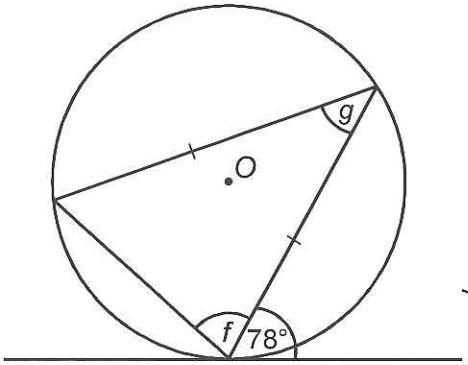
2) $b =$ 51° $c =$ 66°



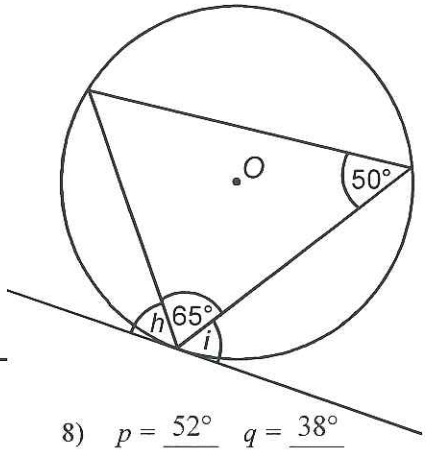
3) $d =$ 92° $e =$ 28°



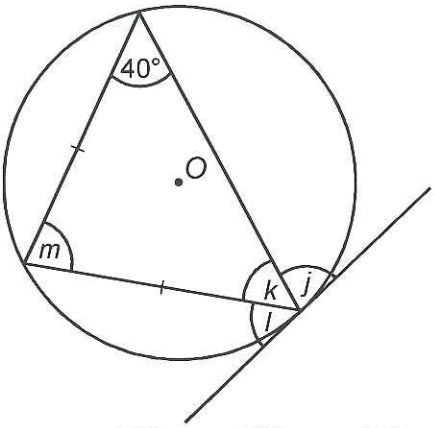
4) $f =$ 78° $g =$ 24°



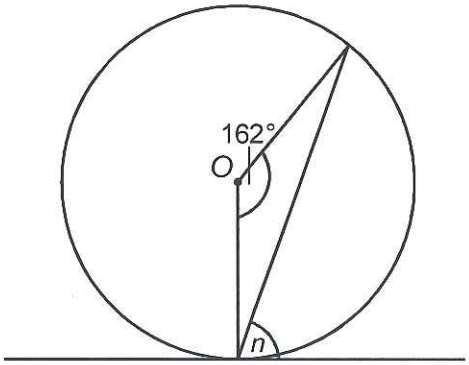
5) $h =$ 50° $i =$ 65°



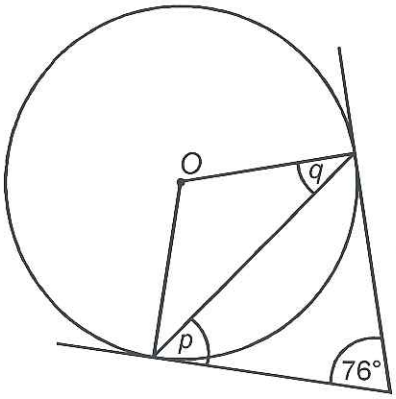
6) $j =$ 100° $k =$ 40° $l =$ 40° $m =$ 100°



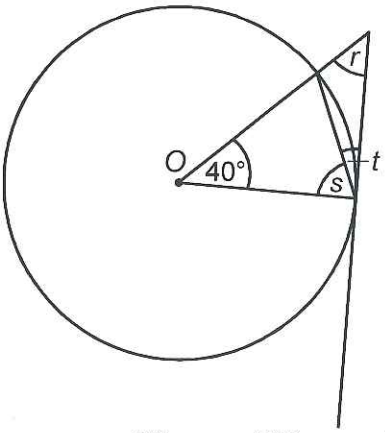
7) $n =$ 81°



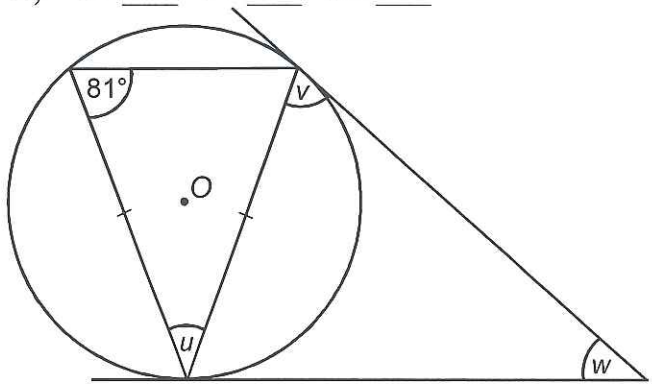
8) $p =$ 52° $q =$ 38°



9) $r =$ 50° $s =$ 70° $t =$ 20°



10) $u =$ 18° $v =$ 81° $w =$ 18°



11) $x =$ 68° $y =$ 22° $z =$ 56°