Circle Properties 1.

The angle in a semicircle.
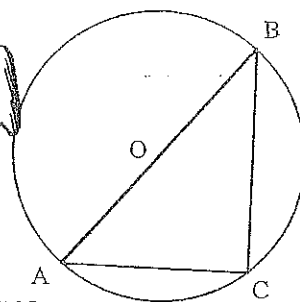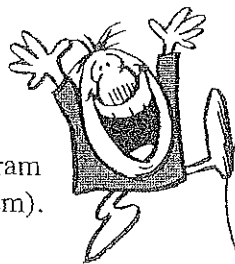
1). Draw a circle of any size, centre O.
   (You will be taking measurements from the diagram
   so make the radius of your circle greater than 5 cm).
   Draw the diameter AB.
   At any point on the circumference mark the point C.
   Draw the lines AC and BC. Measure and record all the angles.
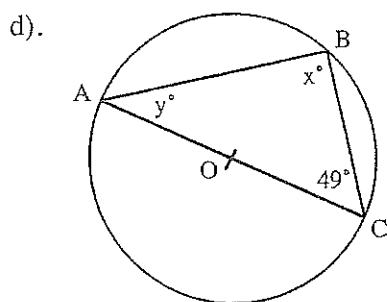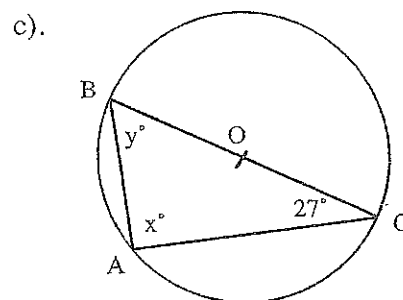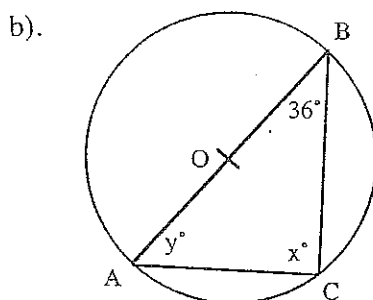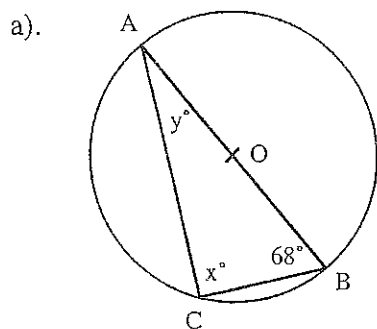   Repeat these instructions for another **two** circles. Write your findings.

2). Copy each of the following diagrams and find the marked angles.
   The letter O represents the centre of the circle.

Diagrams not to scale

a).

b).

c).

d).

e).

f).

g).

h).

i).

j).

k).

l).
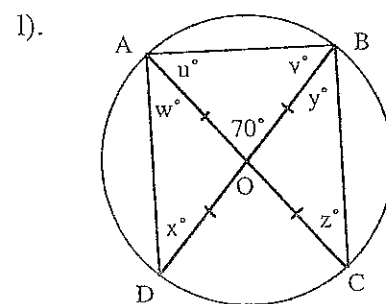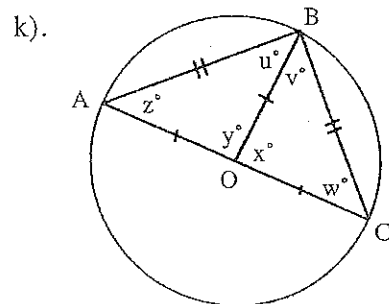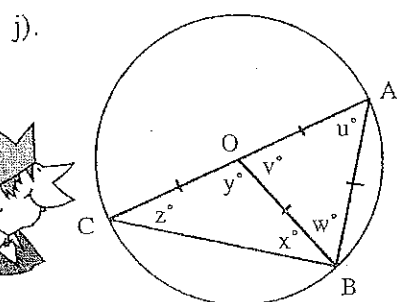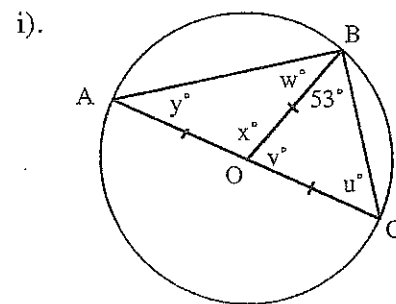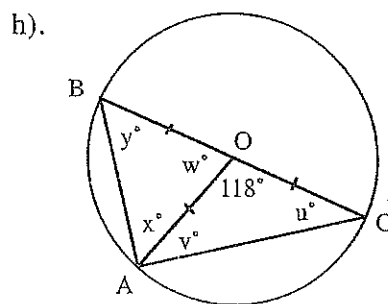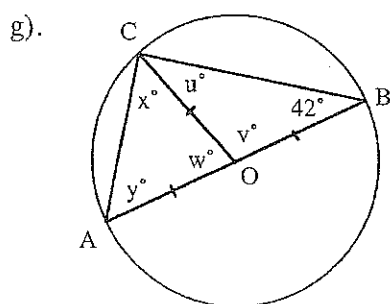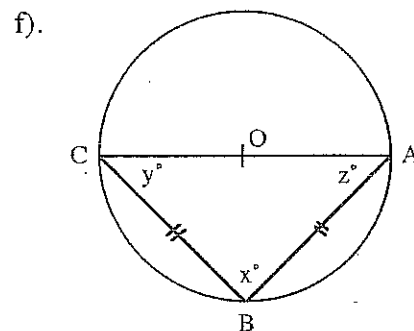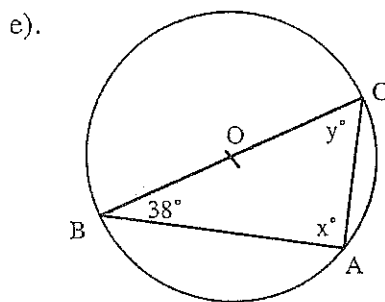
The angle at the centre.

1). Draw a circle of any size, centre O.
   Draw two radii OA and OB.
   At any point on the circumference mark the point C.
   Draw the lines AC and BC. Measure and record all the angles.
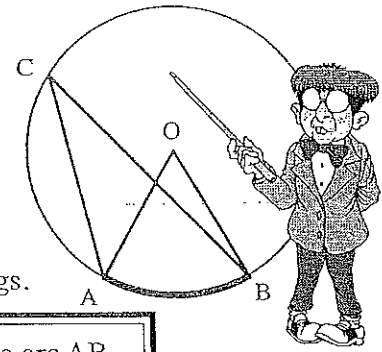   Repeat these instructions for another **two** circles. Write your findings.

∠ACB and ∠AOB are said to be angles **subtended** by the arc AB.

2). Copy each of the following diagrams and find the marked angles.
   The letter O represents the centre of the circle.
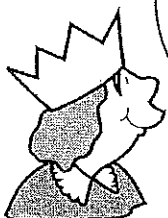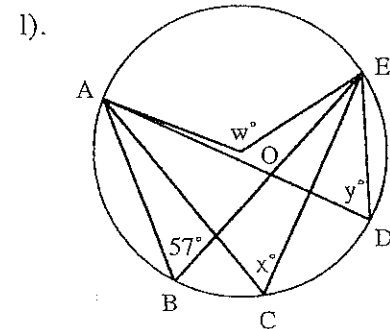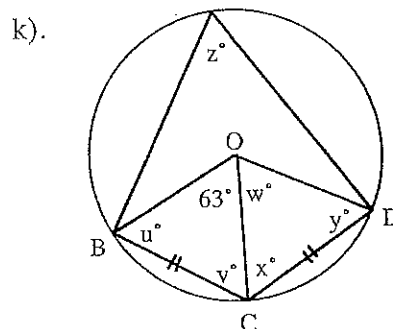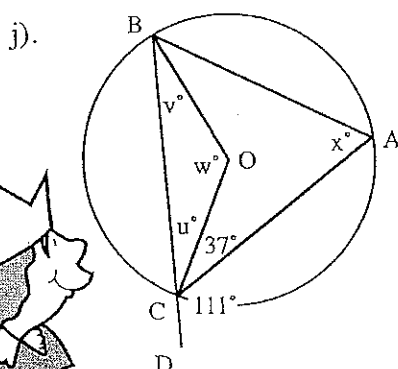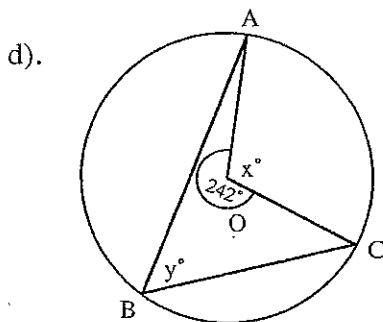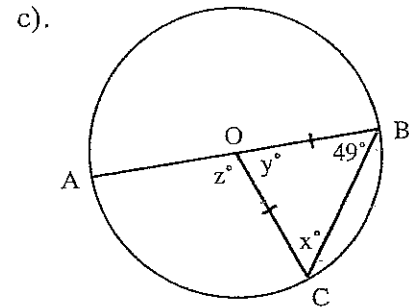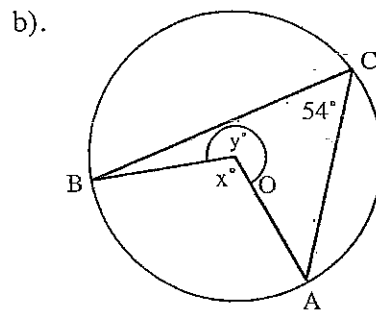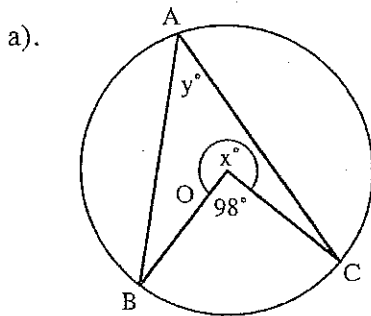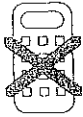
   Diagrams not
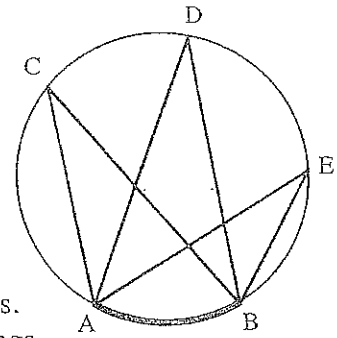   to scale

a).

b).

c).

d).

e).

f).

g).

h).

i).

j).

k).

l).
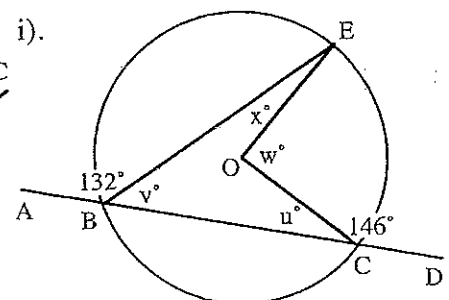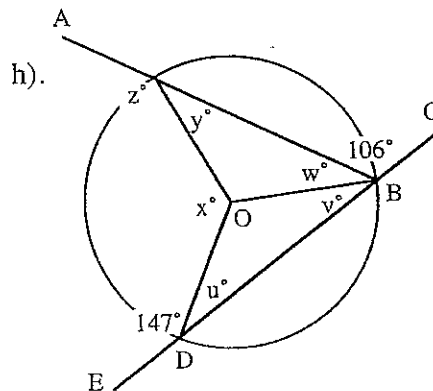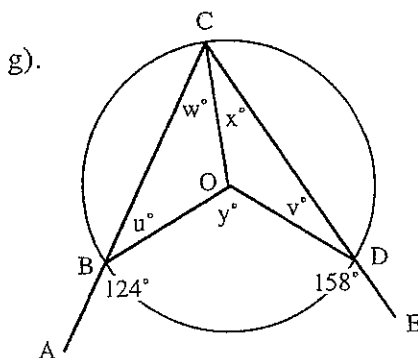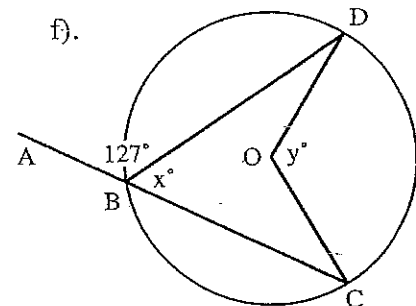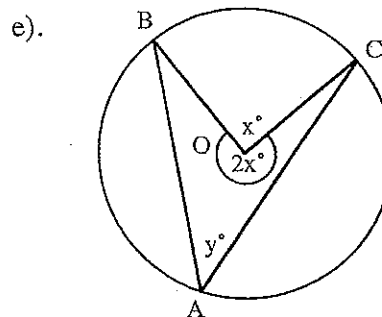
Circle Properties 2.

Angles in the same segment.

1). Draw a circle of any size.
   Mark two points on the circumference A and B.
   Also on the circumference mark 3 more points C, D and E.
   Draw the lines as in the diagram. Measure and record all the angles.
   Repeat these instructions for another **two** circles. Write your findings.

∠ACB, ∠ADB and ∠AEB are said to be angles **in the same segment**.

2). Copy each of the following diagrams and find the marked angles.
   Where marked, the letter O represents the centre of the circle.
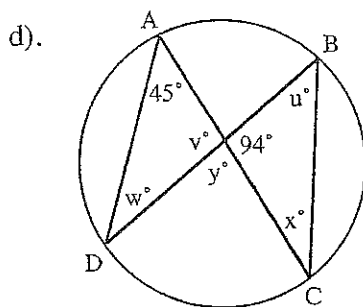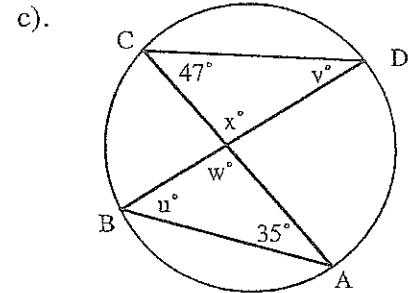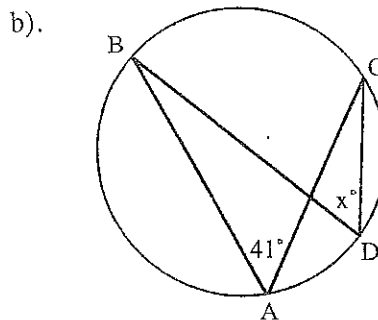
Diagrams not to scale

a).

b).

c).

d).

e).

f).

g).

h).

i).

j).

k).

l).
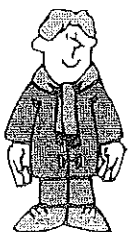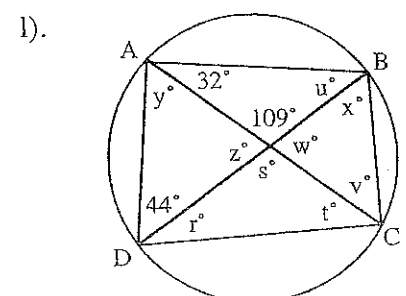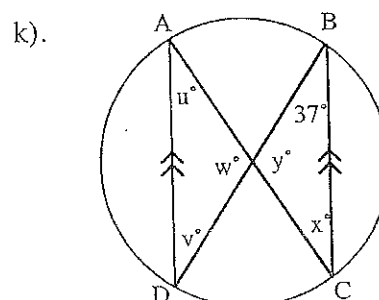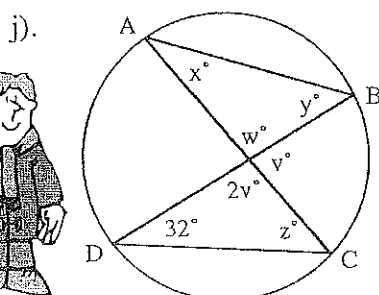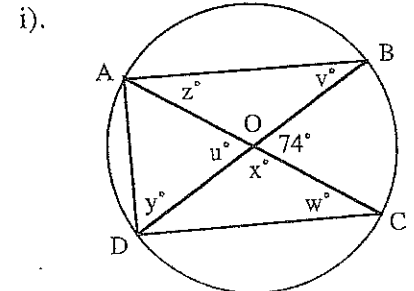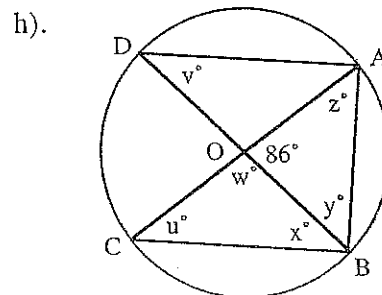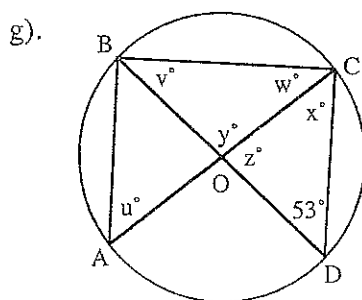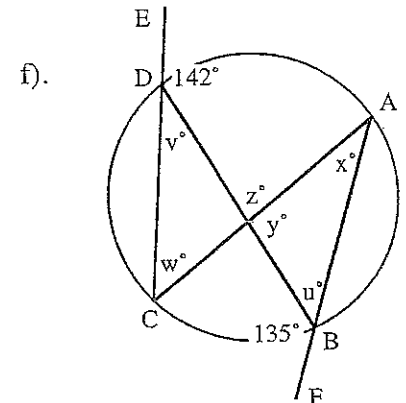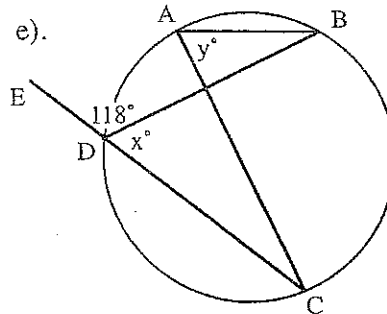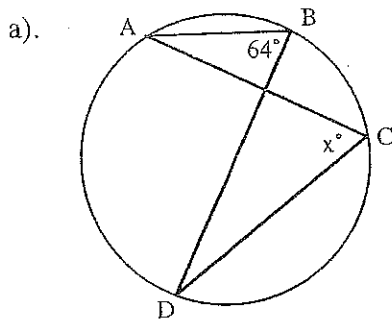
Angles in a Cyclic Quadrilateral.

1). Draw a circle of any size.
   Draw a quadrilateral inside the circle as shown in the diagram.
   Extend one of the sides of the quadrilateral.
   Measure and record all the angles.
   Repeat these instructions for another **two** circles. Write your findings.

> A quadrilateral whose vertices **all** touch the circumference of a circle
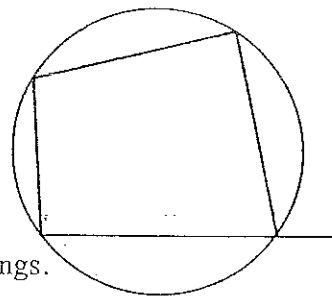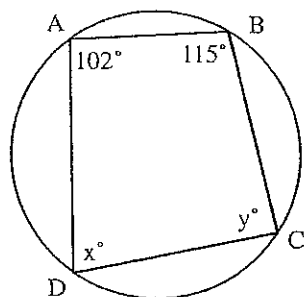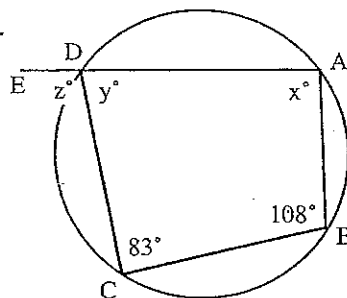> is called a **cyclic quadrilateral**.

2). Copy each of the following diagrams and find the marked angles.
   Where marked, the letter O represents the centre of the circle.
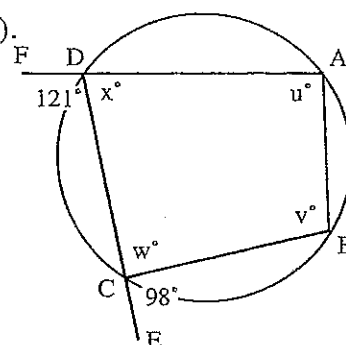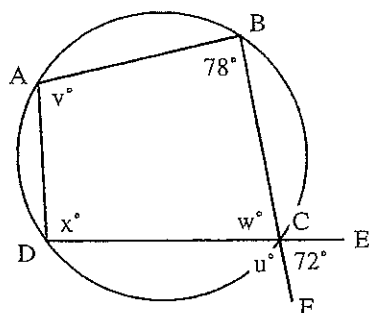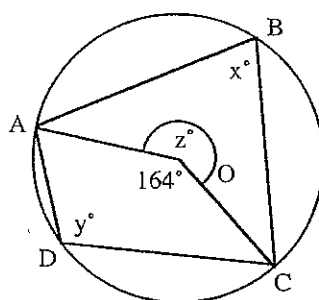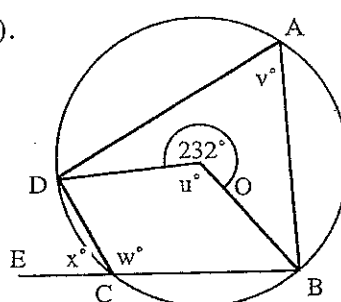
Diagrams not
to scale

a).

b).

c).

d).

e).

f).

g).

h).

i).

j).

k).

l).
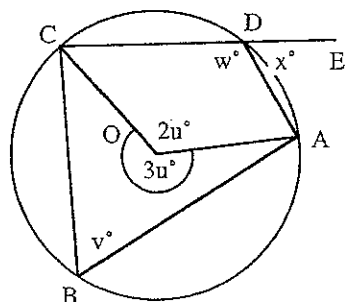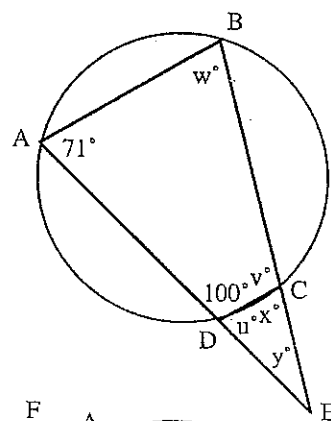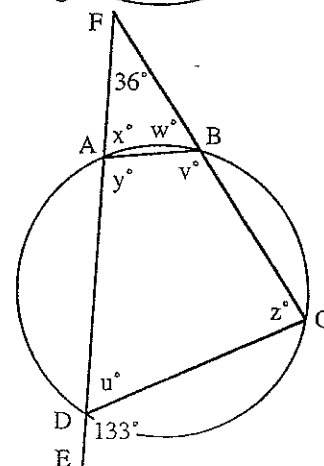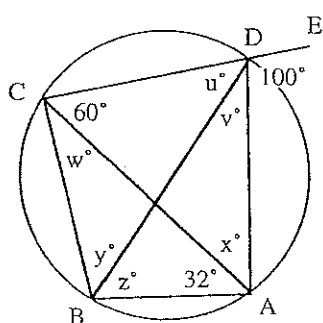
Circle Properties 3.

Tangents.

1). Draw a circle of any size.
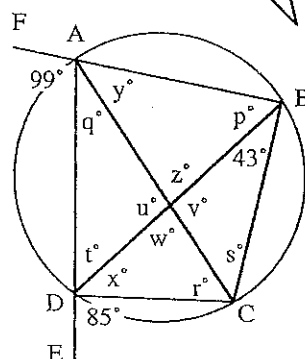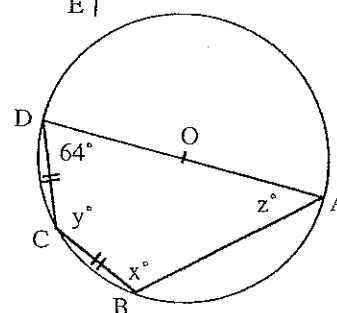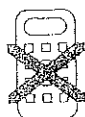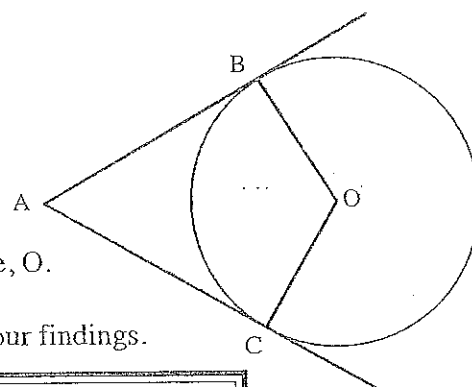   Draw two tangents to the circle that meet at A.
   Where the tangents touch the circle join them to the centre, O.
   Measure and record all the angles and lengths.
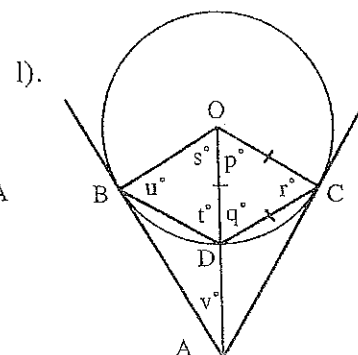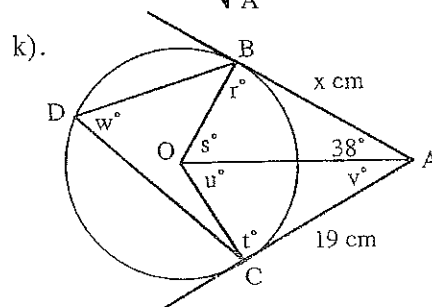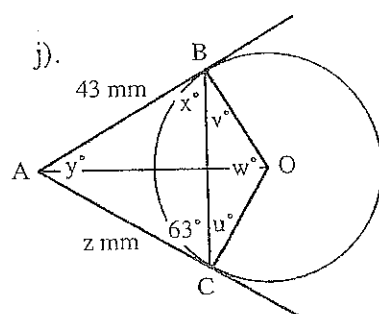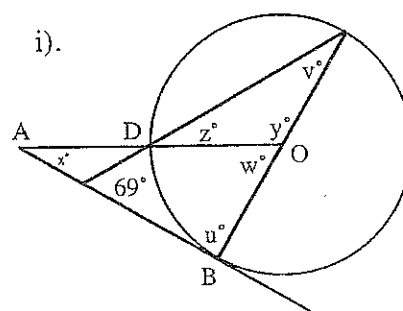   Repeat these instructions for another two circles. Write your findings.

> A **tangent** touches a circle. It does not cross the circumference.

2). Copy each of the following diagrams and find the marked angles and lengths.
   The letter O represents the centre of the circle, and the lines AB and AC are tangents.

Diagrams not to scale

a).

b).

c).

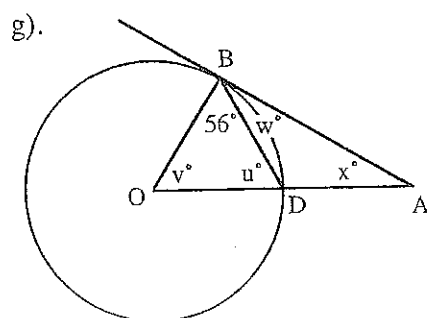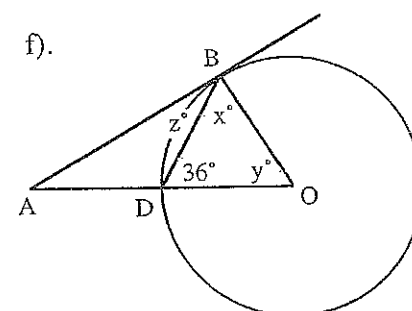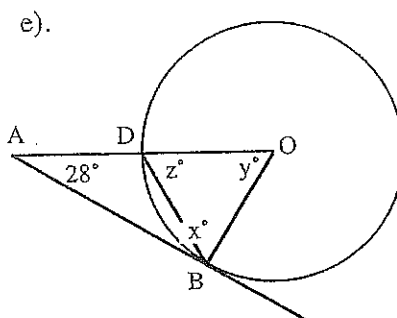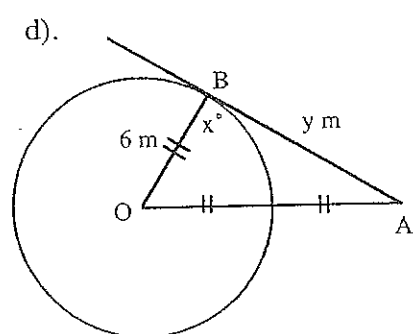d).

e).

f).

g).

h).

i).

j).

k).

l).

help@www.10ticks.co.uk
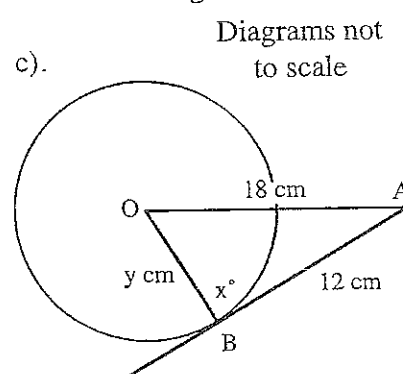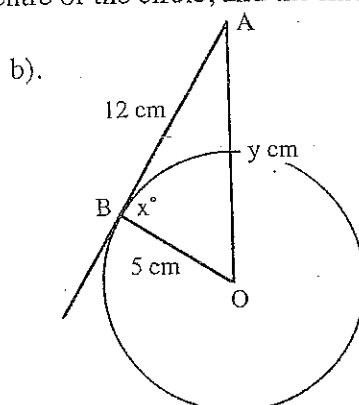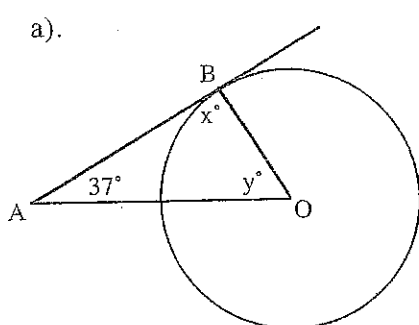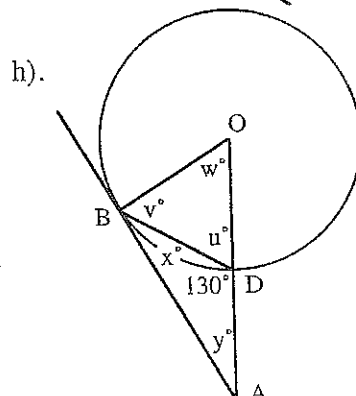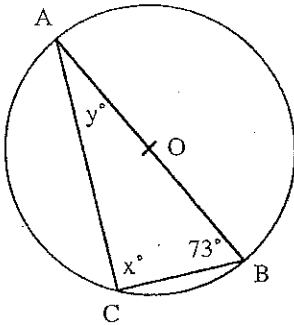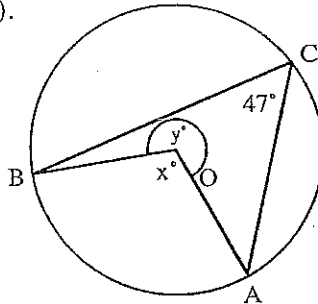
Circle Properties 4.

Mixed Questions.

Copy each of the following diagrams and find the marked angles and lengths.
The letter O represents the centre of the circle.
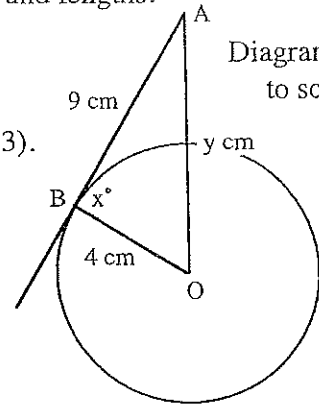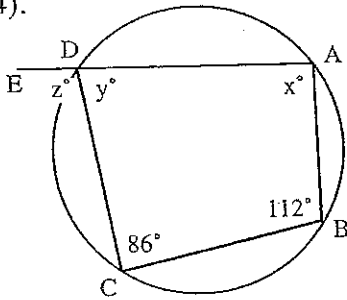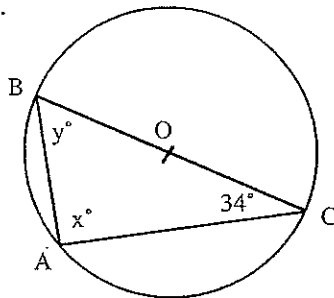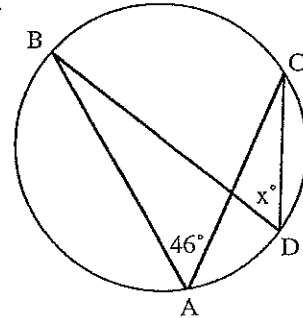
Diagrams not to scale

1).

2).

3).

9 cm

y cm

B x°

4 cm

4).

5).

6).

7).

8).

9).

10).

11).

12).

13).

C u° B
x°   39°
      v°
y° w° O

14).

E
D 145°   A
      v°   x°
         z°
         y°
C w°
      u°
131° B
F

15).

O
w°
B v°
   u°
x°
128° D
y°
A

16).

D
A 119°   O y°
   x°
B
C

17).

A 27°
      B
   w° y°
   2v°
D 3v°
x°   z° C

18).

B
y°   O
   w°
   104°
x°   u° C
v°
A

19).

A u°   v° B
   w°   y°
      84°
      O
x°   z°
D   C

20).

B
      9.4 cm
D w° r°
      s°   39°
O u°   v°
   t°   x cm
C

21).

A 33°   u° B
y°   x°
      118°
   z° w°
   s°
47°   v°
r°
D   t° C

22).

A
      v°
      236°
D u° O
E x° w°
   C   B

23).

D E
C u° 101°
62°   v°
w°
y° z° x°
B 36° A

24).

A
   z°
   O
B 58° w°
u°   y° D
v° x°
C

25).

A
z°
   y°
      C
   w° 102°
   v° B
x°
O
u°
139°
E D

26).

F
49°
A x° w° B
y° v°
         z° C
u°
D 136°
E

27).

B
z mm x°
      v°
A y°   w° O
      59° u°
47 mm
C