


Circle Properties

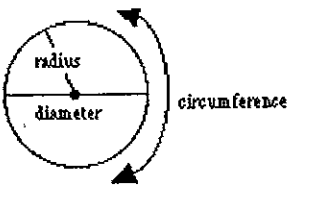
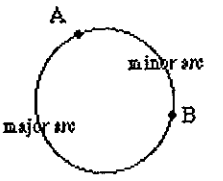
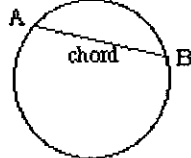
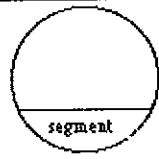



A circle is a plane shape formed by a curve such that all points on the curve are the same distance from a fixed point, called the centre. 


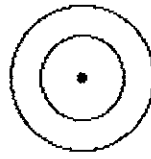
Definitions

Radii

Tangents

Definitions

<p>A circumference is the distance around a circle.</p> <p>A radius is the distance from the centre to any point on the circumference.</p> <p>A diameter is a chord that passes through the centre. The length of the diameter is twice the length of the radius.</p>	 <p>The diagram shows a circle with a center point. A line segment from the center to the circumference is labeled 'radius'. A line segment passing through the center from one side of the circumference to the other is labeled 'diameter'. A curved arrow following the outer edge of the circle is labeled 'circumference'.</p>
<p>An arc is a part of the circumference.</p> <p>A major arc is more than half of the circumference.</p> <p>A minor arc is less than half of the circumference.</p>	 <p>The diagram shows a circle with two points, A and B, on its circumference. The shorter path between A and B is labeled 'minor arc'. The longer path between A and B is labeled 'major arc'.</p>
<p>A chord is a line joining two points on the circumference.</p>	 <p>The diagram shows a circle with two points, A and B, on its circumference. A straight line segment connects A and B, labeled 'chord'.</p>
<p>A segment is an area of a circle bounded by a chord and the circumference.</p>	 <p>The diagram shows a circle with a horizontal chord. The area between the chord and the lower part of the circumference is shaded and labeled 'segment'.</p>
<p>A sector is an area of a circle bounded by two radii and the circumference.</p>	 <p>The diagram shows a circle with two radii drawn from the center to the circumference, forming a wedge-shaped area labeled 'sector'.</p>
<p>A tangent is a line that touches the circumference of the circle at only one point.</p>	 <p>The diagram shows a circle with a horizontal line touching it at a single point. The line is labeled 'tangent'.</p>
<p>Concyclic points lie on the circumference of the same circle.</p>	 <p>The diagram shows a circle with a point labeled 'A' on its circumference.</p>

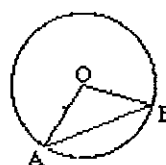
e.g. A, B and C are concyclic points.	
Concentric circles have the same centre. e.g. The two circles shown are concentric.	

Radii

Two radii in a circle form part of an isosceles triangle.

e.g. OAB is an isosceles triangle.

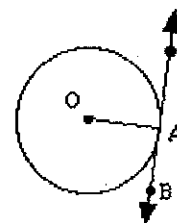
$$\angle A = \angle B$$



Tangents

A tangent to a circle forms an angle of 90° with the radius at the point of contact.

e.g. $\angle OAB = 90^\circ$

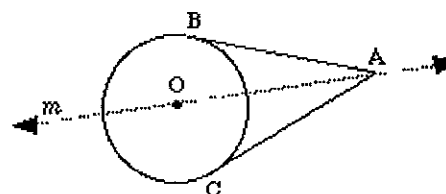


Two tangents to a circle from a point are equal in length.

A line from the point to the centre of the circle is an axis of symmetry.

e.g. $AB = AC$

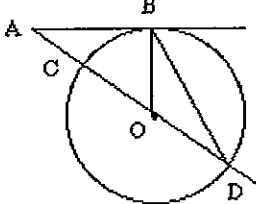
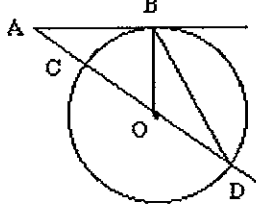
m is an axis of symmetry.



Circle Properties

Unit Test #26

Select your answers to the following 10 questions from the pop-up menus in the right hand column. When you are satisfied with your answers, fill in your name in the space provided below the test, and click the "Submit Test" button. Clicking the "Begin Test Again" button will clear all the answers.

<p>Q1:</p>	 <p>What name is given to line AB?</p>	<p>A. diameter B. tangent C. chord D. segment</p>	<p>Answer 1:</p>	<input type="text"/>
<p>Q2:</p>	<p>In the diagram in question one, which line is a chord?</p>	<p>A. AC B. BD C. BO D. AB</p>	<p>Answer 2:</p>	<input type="text"/>
<p>Q3:</p>	<p>In the diagram in question one, which line is a diameter?</p>	<p>A. OB B. OD C. OC D. CD</p>	<p>Answer 3:</p>	<input type="text"/>
<p>Q4:</p>	 <p>Which line is a radius? Select the best answer:</p>	<p>A. OD B. OC C. OB D. All of the above</p>	<p>Answer 4:</p>	<input type="text"/>
<p>Q5:</p>	<p>In the diagram in question 4 name an isosceles triangle.</p>	<p>A. $\triangle ABD$ B. $\triangle ABO$ C. $\triangle BOA$ D. $\triangle BOD$</p>	<p>Answer 5:</p>	<input type="text"/>
<p>Q6:</p>	<p>In the diagram in question 4, name a right angle.</p>	<p>A. $\angle BOA$ B. $\angle BOD$ C. $\angle OBA$ D. $\angle BOC$</p>	<p>Answer 6:</p>	<input type="text"/>
<p>Q7:</p>	<p>What name is given to half of a circle?</p>	<p>A. semi-circle B. hemi-circle C. quadrant D. segment</p>	<p>Answer 7:</p>	<input type="text"/>
		<p>A. 120°</p>		<input type="text"/>

Q8:	A sector is formed by the part of a circle. The angle of the sector is:	B. 90° C. 60° D. 30°	8:	<input type="checkbox"/>
Q9:	The angle between a radius and a tangent is ALWAYS	A. 90° B. 180° C. 45° D. 360°	Answer 9:	<input type="checkbox"/>
Q10:	Approximately how many times does the diameter of a circle fit around the circumference?	A. 1 B. 2 C. 3 D. 4	Answer 10:	<input type="checkbox"/>

Enter your initial and surname here:

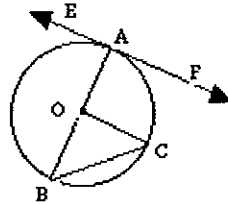
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Circle Properties

O marks the centre of each circle.

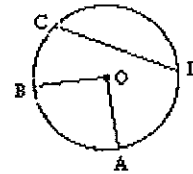
1. Name:

- (a) A diameter
- (b) An arc
- (c) A chord
- (d) A tangent
- (e) A radius



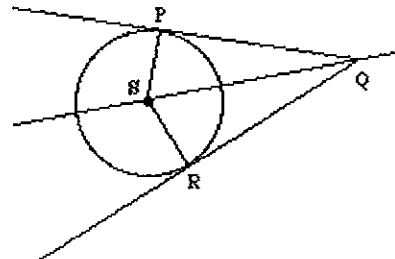
2.

- (a) Shade a sector.
- (b) Shade a segment.
- (c) Name all four concyclic points.
- (d) Draw a circle concentric with the circle ABCD.



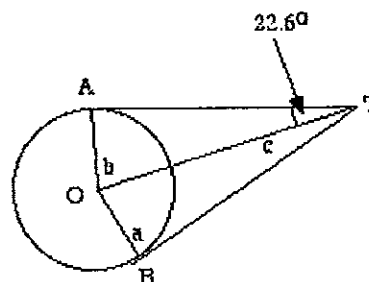
3.

- (a) Name an angle equal to $\angle PQS$.
- (b) Complete: Length $PQ = \dots\dots\dots$
- (c) Name two perpendicular lines.
- (d) Name a triangle congruent to $\triangle PSQ$.

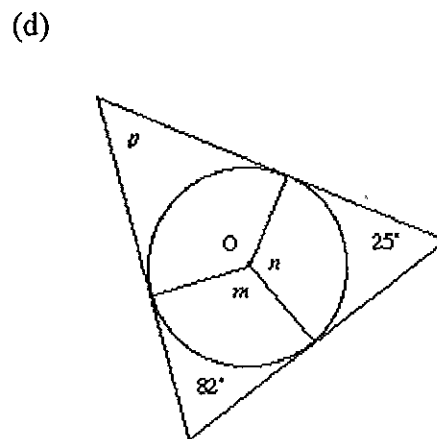
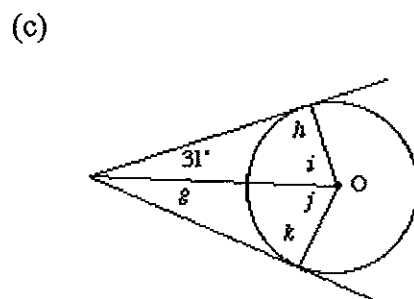
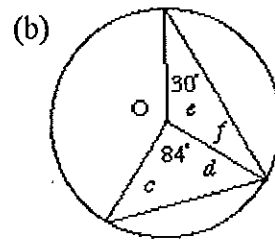
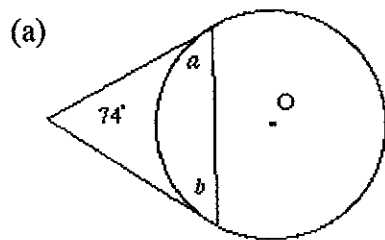


4.

- m is an axis of symmetry.
- TA and TB are tangents to the circle.
- Calculate the values of a, b, c and d.



5. Find the values of the variables.

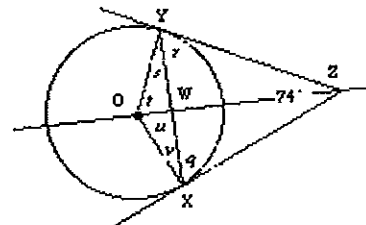


6.

a. Find the values of q , r , s , t , u and v .

b. Name a triangle congruent to $\triangle OWY$.

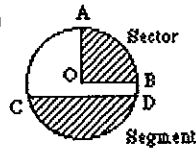
c. Name two isosceles triangles.



Circle Properties

1. (a) AB
- (b) CB, AC or AB
- (c) CB
- (d) EF
- (e) OA, OC or OB

2. (a) and (b)



- (c) A, B, C and D
- (d) Any circle, centre O

3. (a) \angle RQS (b) RQ (c) SP and PQ, RQ and RS

- (d) \triangle RSQ

4. (a) $a = 90^\circ$, $b = 67.4^\circ$, $c = 22.6^\circ$

5. (a) $a = 53^\circ$, $b = 53^\circ$

- (b) $c = 48^\circ$, $d = 48^\circ$, $e = 120^\circ$, $f = 30^\circ$

- (c) $g = 31^\circ$, $h = 90^\circ$, $i = 59^\circ$, $j = 59^\circ$, $k = 90^\circ$

- (d) $m = 98^\circ$, $n = 155^\circ$, $p = 73^\circ$

6. (a) $q = 53^\circ$, $r = 53^\circ$, $s = 37^\circ$, $t = 53^\circ$, $u = 53^\circ$, $v = 37^\circ$

- (b) \triangle OXW (c) \triangle OXY and \triangle XYZ