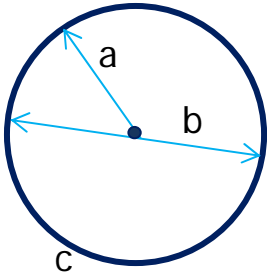


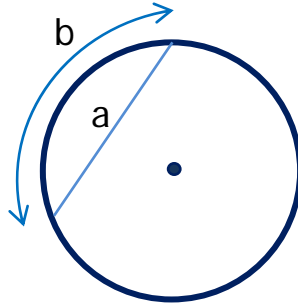
Circles

Name the lines a, b and c.



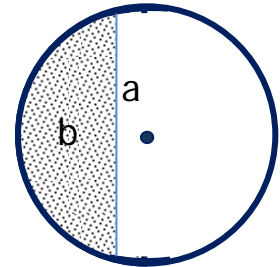
Circles

Name lines a and b.



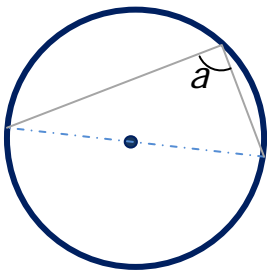
Circles

Name line a and section b.



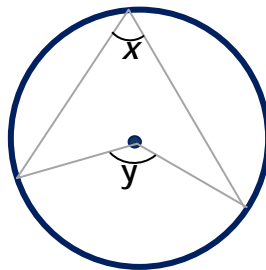
Circles

1. What is the size of angle a?
2. State the rule.



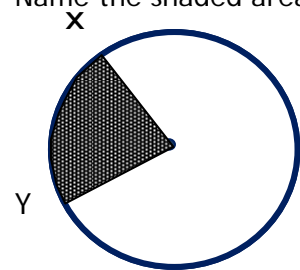
Circles

1. What do you know about angles x and y?
2. State the rule.



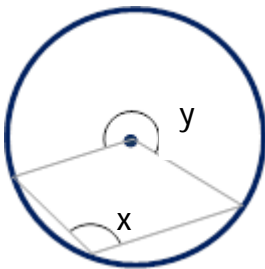
Circles

- O is the centre of the circle.
1. Name lines OX and OY.
 2. Name the shaded area.



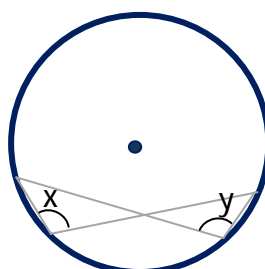
Circles

1. What do you know about angles x and y?
2. State the rule.



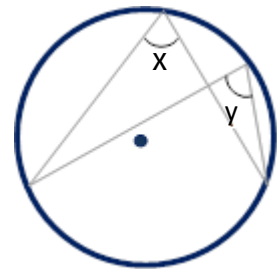
Circles

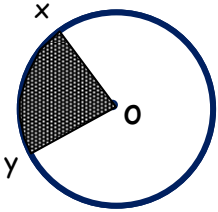
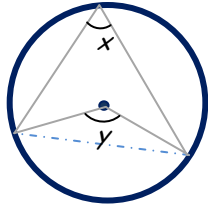
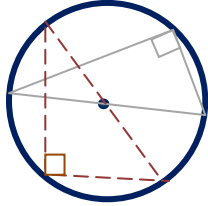
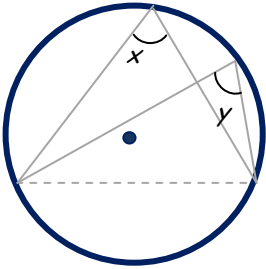
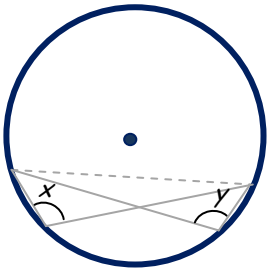
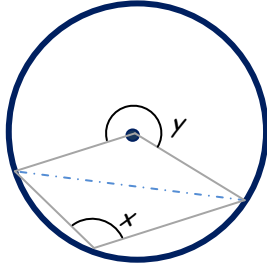
1. What do you know about angles x and y?
2. State the rule.



Circles

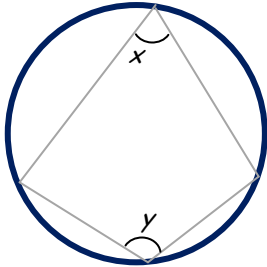
1. What do you know about angles x and y?
2. State the rule.



<p>a. chord</p> <p>b. segment (an area of the circle enclosed by a chord)</p>	<p>a. chord</p> <p>b. arc (a section of the circumference subtended by an arc)</p>	<p>a. radius</p> <p>b. diameter</p> <p>c. circumference</p>
<p>1. OX and OY are both radii (plural of radius).</p> <p>2. The shaded area between them is called a sector.</p> 	<p>$y = 2x$</p> <p>When subtended by the same chord, the angle at the centre is twice the angle at the circumference.</p> 	<p>1. $a = 90^\circ$</p> <p>2. Angles at the circumference subtended by the diameter are always 90°.</p> 
<p>$y = x$</p> <p>Angles at the circumference, subtended by the same arc, are equal.</p> 	<p>$y = x$</p> <p>Angles at the circumference, subtended by the same arc, are equal.</p> 	<p>$y = 2x$</p> <p>When subtended by the same chord, the angle at the centre is twice the angle at the circumference.</p> 

Circles

1. What do you know about angles x and y ?
2. State the rule.



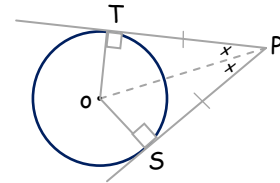
Circles

1. What is a tangent?
2. What angle does it make with a radius?

Circles

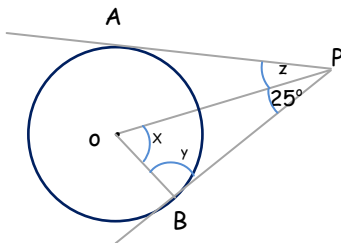
What do you know about lines PT and PS ?

Describe OP 's relationship to PT and PS .



Circles

Work out the size of angles x , y and z .

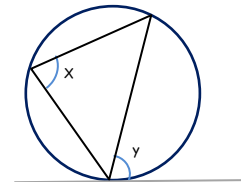


Circles

Explain the alternate segment theory.

Circles

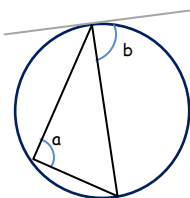
1. What do you know about angles x and y ?
2. State the rule.



Circles

What do you know about angles a and b ?

State the rule.



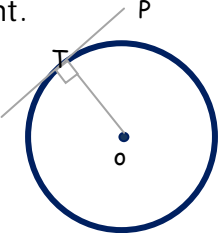
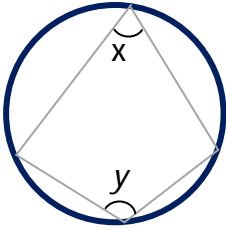
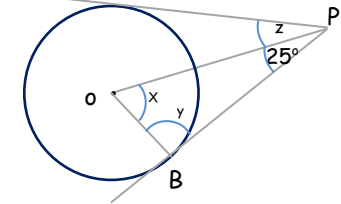
Circles

What is a cyclic quadrilateral?

State the rule for angles in a cyclic quadrilateral.

Circles

Aside from circle theorems, suggest some other angle rules you may need to know when given a question on angles in circles.

<p>TP and SP are tangents. They are the same length. OP bisects lines TP and SP.</p>	<ol style="list-style-type: none"> 1. A tangent is a straight line which touches the circumference of a circle at just one point. 2. It makes a right angle with the radius at that point. 	<p>$x + y = 180^\circ$</p>  <p>In a cyclic quadrilateral the opposite angles sum to 180°.</p>
<p>$x = y$</p> <p>This is the alternate segment theory.</p>	<p>The alternate segment theory states that ...</p> <p>The angle between a tangent and a chord is equal to any angle made by the same chord in the alternate segment.</p>	<p>$z = 25^\circ$ (AP and BP are tangents. OP bisects angle APB) $y = 90^\circ$ (A tangent makes a right angle with the radius) $x = 65^\circ$ (Angles in a triangle sum to 180°)</p> 
<p>You may need to know:</p> <p>Angles in a triangle</p> <p>Parallel line rules (corresponding, alternate and allied angles)</p>	<p>A cyclic quadrilateral is one where all four vertices touch the circumference of a circle.</p> <p>The opposite angles sum to 180°</p>	<ol style="list-style-type: none"> 1. $a = b$ 2. This is the alternate segment theory

Teaching notes

This pack contains 18 flash cards (nine per double-sided sheet).

Print or photocopy the sheets back to back, so that the questions match up with the answers on the other side. It may be best to print onto thin/scrap paper first to check alignment, before printing onto thicker card or paper.

Collect the cards together into a set with a paper clip, envelope, etc.

Students should be encouraged to take ownership of their cards, either by colour-coding, adding notes, or adding their own cards to the pack.

Cards can be used for independent revision or a 'test' with a friend asking the questions.