Name:	Period:

Hexagon Inscribed in a Circle

http	://www.mathopenref.	com/constinhexagon.ht	ml
Start: Given a circle with center O, construct a hexagon inscribed in the circle.		4. Move the compass on the next vertex and draw another arc. This is the third vertex of the hexagon.	
1. Mark a point anywhere on the circle. This will be the first vertex of the hexagon.		5. Continue this way until you have all six vertices.	.0
2. Set the compass on this point and set the width of the compass to the center of the circle, so the length of the compass is the radius of the circle.		6. Draw a line between each successive pairs of vertices, for a total of six lines.	.0
3. Make an arc across the circle. This will be the next vertex of the		Doi	ne!
hexagon.		You have co	_

Equilateral Triangle Inscribed in a Circle

of the circle. 3. Make an arc across the circle.		DOI You have co	
2. Set the compass on this point and set the width of the compass to the center of the circle, so the length of the compass is the radius	0	6. Draw a line between every other arc, for a total of three lines.	
1. Mark a point anywhere on the circle. This will be the first vertex of the equilateral triangle.		5. Continue this way until you have six arcs.	
Start: Given a circle with center O, construct an equilateral triangle inscribed in the circle.		4. Move the compass on the next vertex and draw another arc. This is the second vertex of the equilateral triangle.	.0

Square Inscribed in a Circle

htt	p://www.mathopenret	f.com/constinsquare.htn	11
Start: Given a circle with center O, construct a square inscribed in the circle.	0,	4. Draw an arc above and below 0.	
1. Mark a point A on the circle. This will become one of the vertices of the square.	A 0.	5. Move the compass to C and repeat.	a c
2. Draw a diameter line from the point A, through the center and on to cross the circle, again, creating point C.		6. Draw a line through where the arc pairs cross, making it long enough to touch the circle at the top and bottom, creating the new points B and D.	A service residence of the service o
3. Set the compass on A and set the width to a little more than the distance to <i>O</i> .	A CO	7. Draw a line between each successive pairs of points A, B, C, D. ABCD is a square.	

Tangent at a Point on a Circle

ht	tp://www.mathopenre	f.com/consttangent.html	
Start: Given a circle with center O and point P somewhere on the given circle, construct a tangent at the point on the circle.	i	4. Without changing the compass's width, draw an arc approximately in the position show on one side of P.	0
1. Draw a straight line from the center <i>O</i> , through the given point P and on beyond P.		5. Without changing the compass's width, move the compass to R and Make another arc across the first, creating point S.	2000
2. Put the compass's point on P and set it to any width less than the distance OP. Then, on the line just drawn, draw an arc on each side of P. This creates the points Q and R as shown.		6. Draw a line through P and S.	
3. Set the compass on Q and set it to any width greater than the distance QP.		7. Done. The line PS just drawn is the tangent to the circle O through point P.	

Perpendicular Bisector of a Line Segment

2. Set the compass's width to approximately two thirds the line length. The actual width does not matter. 3. Without changing the compass's width, draw an arc above and below the line. 4. Again, without changing the compass's width, place the compass's width, place the compass's point on the other end of the line. Draw an arc above and below the line so that the arcs cross the first two. 5. Using a straightedge, draw a line between the points where the arcs intersect. Done! This line is perpendicular to the first line and bisects it (cuts it at the exact midpoint of the line).	http://www.matho Start: Given a line segment PQ, construct its perpendicular bisector.	http://www.mathopenref.com/constbisectline.html art: Given a line segment 2, construct its rpendicular bisector.
strength of the line straight of the line straight does not the line straight draw an above and below the sorn arc above and of the line. This line is swhere the arcs sheet it (cuts it at kact midpoint of the line so that the cross the first two.		
s the line length. The pal width does not the ferror changing the pass? s width, draw an above and below the palin, without changing compass's width, place omd of the line. I am arc above and verte lines so that the cross the first two. I may between the sample arcs to the first two. I mis line is sect. I mis line is endiqual to the first and bisects it (cuts it at wath midpoint of the line wath midpoint of the lines wath midpoint wath wath wath wath wath wath wath wat	2. Set the compass's width to approximately two	
thout changing the passs's width, draw an thove and below the pass's width, draw an thove and below the gain, without changing ompass's width, place ompass's vidth, place ompass's point on the can of the line. I am arc above and with the line so that the cross the first two. I am arc above and with the line is sing a straightedge, a line between the swhere the arcs I his line is sect. I his line is endicular to the first and bisects it (cuts it at wact midpoint of the line is line line is line line is line line line line line line line line		
thout changing the pass's width, draw an above and below the pass's width, place ompass's width, place ompass's point on the end of the line. I an arc above and withe line so that the cross the first two. I aline between the sing a straightedge, a line between the swhere the arcs sect. I This line is endicular to the first and bisects it (cuts it at kact midpoint of the	matter.	
thove and below the page ompass's width, place ompass's point on the central and of the line. The arc above and with eline. The line so that the cross the first two. I fing a straightedge, a line between the swhere the arcs sect. I This line is endicular to the first and bisects it (cuts it at wact midpoint of the first midpoint	3. Without changing the	
gain, without changing ompass's width, place ompass's vidth, place ompass's point on the rend of the line. I an arc above and w the line so that the cross the first two. I aline between the swhere the arcs swhere the arcs sect. I This line is endicular to the first at ma bisects it (cuts it at kact midpoint of the kact	compass's Width, draw an arc above and below the	
gain, without changing ompass's width, place ompass's width, place ompass's boint on the rend of the line. I an arc above and with the cross the first two. I a line between the swhere the arcs sect. I This line is endicular to the first and bisects it (cuts it at wact midpoint of the compared to th	line.	
ompass's width, place ompass's width, place ompass's point on the - end of the line an arc above and v the line so that the cross the first two. sing a straightedge, - a line between the s where the arcs sect This line is - a li	4. Again, without changing	
end of the line. rend of the line. ran arc above and with the so that the cross the first two. cross the first two. sing a straightedge, a line between the swhere the arcs sect. I This line is endicular to the first and bisects it (cuts it at wact midpoint of the swact midpoint of the line is sect.	the compass's width, place	
w the line so that the cross the first two. In a straightedge, a line between the swhere the arcs sect. I This line is endicular to the first and bisects it (cuts it at wact midpoint of the	other and of the line	
v the line so that the cross the first two. Ing a straightedge, a line between the swhere the arcs sect. I This line is endicular to the first and bisects it (cuts it at wact midpoint of the	Draw an arc above and	O T
cross the first two. sing a straightedge, a line between the s where the arcs sect. I This line is endicular to the first and bisects it (cuts it at kact midpoint of the	below the line so that the	
sing a straightedge, a line between the s where the arcs sect. This line is endicular to the first and bisects it (cuts it at kact midpoint of the	arcs cross the first two.	
Ing a straightedge, a line between the s where the arcs sect. I This line is endicular to the first and bisects it (cuts it at kact midpoint of the		
sect. I This line is endicular to the first at wact midpoint of the	5. Using a straightedge, draw a line hetween the	
This line is endicular to the first and bisects it (cuts it at wact midpoint of the	points where the arcs	
Done! This line is perpendicular to the first line and bisects it (cuts it at the exact midpoint of the line).	intersect.	ō d.
Done! This line is perpendicular to the first line and bisects it (cuts it at the exact midpoint of the line).		
perpendicular to the first line and bisects it (cuts it at the exact midpoint of the line).	Done! This line is	
the exact midpoint of the line).	perpendicular to the first line and bisects it cuts it at	
line).	the exact midpoint of the	
	line).	G

Tangent to a Circle from an External Point

http://www.mathopenref.com/consttangents.html Start: 4. Without changing the Given a circle with center O compass's width, draw an and point P outside the arc across the circle in given circle, construct a the two possible places tangent to the circle from the tangent could touch. point P. These are the contact points J, K, for the tangents. 1. Draw a straight line **5.** Draw the two tangent between the center O of the lines from P through J and given circle and the given point P. 2. Find the midpoint of this 6. The two lines just line by constructing the drawn are tangential to line's perpendicular the given circle and pass bisector. through P. Refer to construction before to construct a perpendicular bisector Done! 3. Place the compass on the midpoint just

constructed, and set its

circle.

width to the center O of the

You have constructed a tangent to the circle from a point outside the circle!