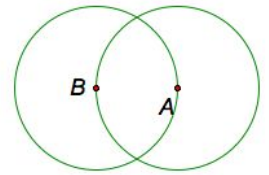
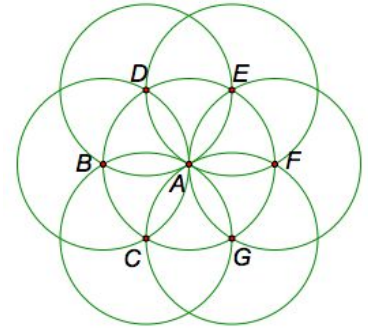


Introduction to Using a Compass

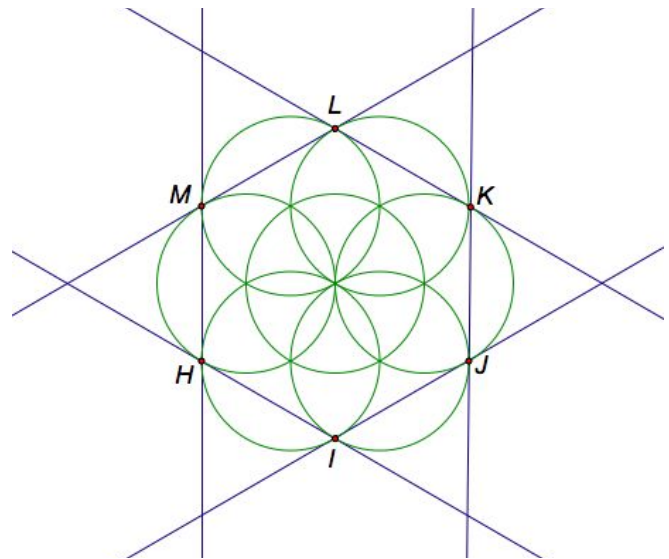
1. Set the radius of your compass to 1-inch. Put the point of the compass in the middle of your paper and draw a circle. (See Circle A.)
2. Create another point on the circle. Use point B as the center to construct another 1-inch circle. (See Circle B above.) If your compass was set to the exact same setting as Circle A, then Circle B should have gone through point A.



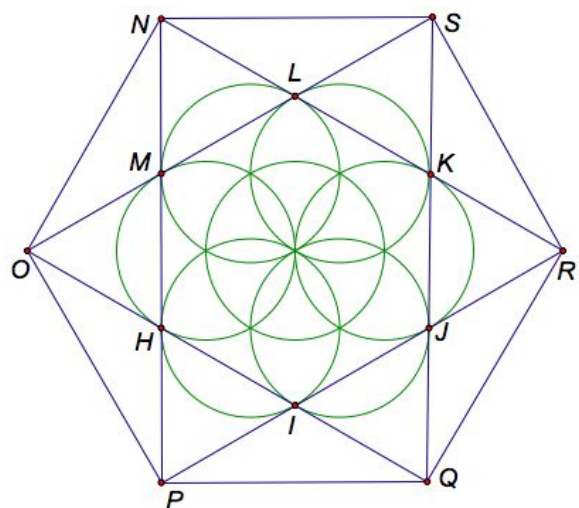
3. Label the points where Circle A and Circle B intersect, C and D. Use these new points as centers to construct two more 1-inch circles.
4. Label the intersection of Circle A and Circle C as point G. Use point G as the center to construct another 1-inch circle. Label the intersection of Circle A and Circle D as point E. Use point E as the center to construct another 1-inch circle.
5. Circle E and Circle G should meet at the same point. Label it point F. Use point F as the center to construct the last 1-inch circle.



6. Label the outer intersection points M, L, K, J, I, and H. See the diagram at right. Using a straightedge (or ruler), draw lines ML, LK, KJ, JI, IH, and HM.

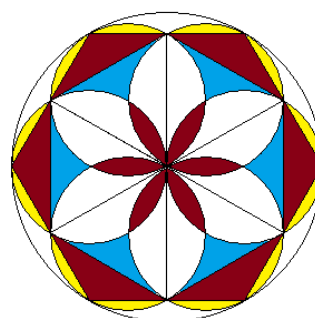
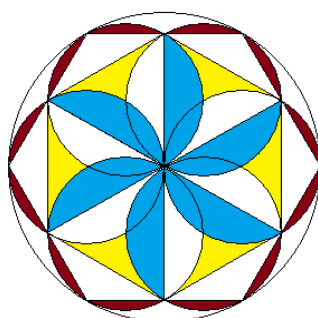
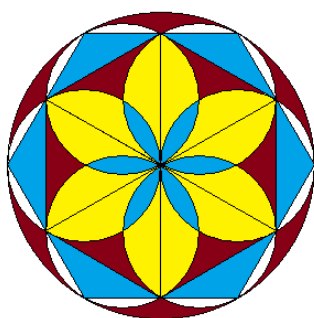
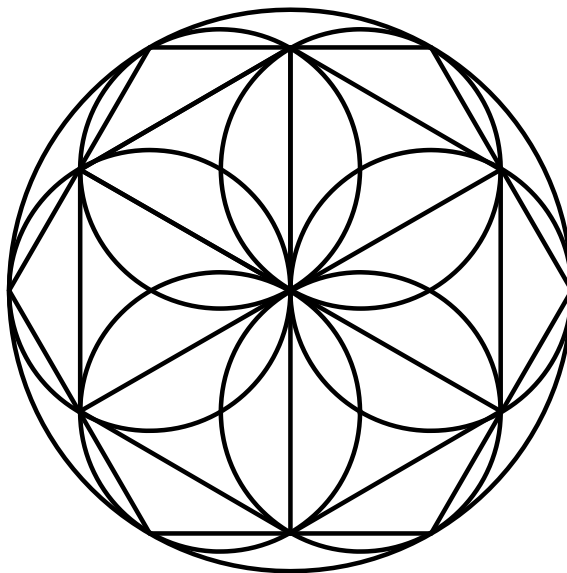


7. Label the intersection of lines HM and LK as point N. Label the intersection of lines ML and KJ as point S. Label the intersection of lines LK and JI as point R. Label the intersection of lines HI and KJ as point Q. Label the intersection of lines HM and JI as point P. Label the intersection of lines ML and HI as point O.
8. Draw segments ON, OP, PQ, QR, RS, and SN to create a regular hexagon.
9. Erase point names and any extra lines. Color your design nice and bright.



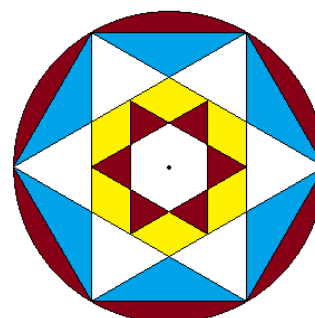
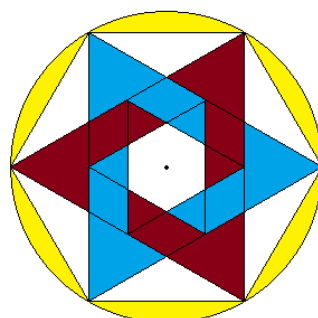
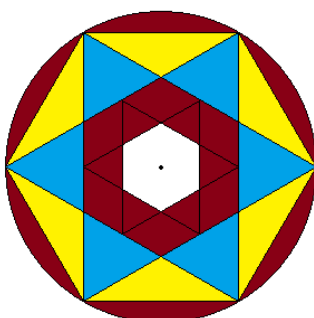
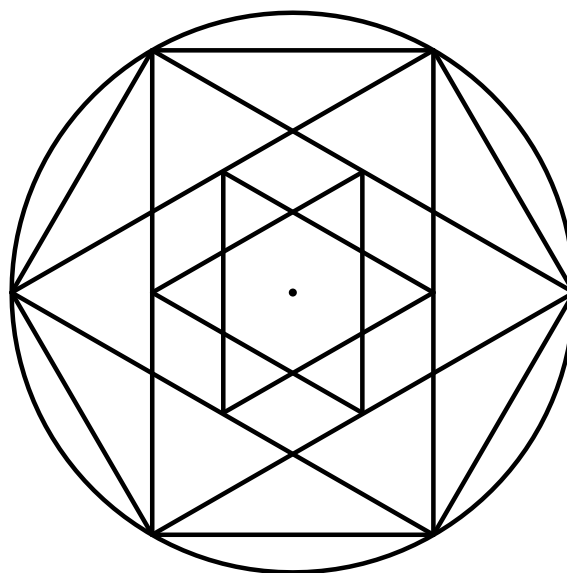
A

You will need to construct:
 An inscribed regular hexagon
 Perpendicular bisectors
 Circumscribed circles



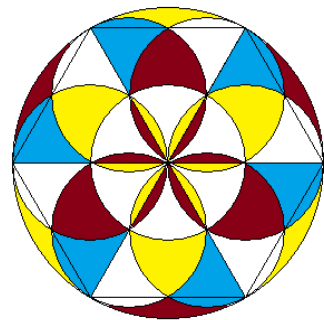
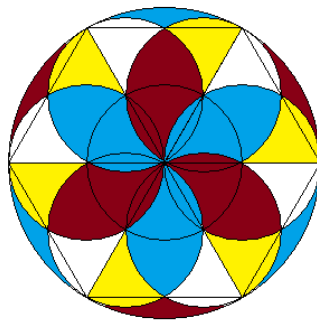
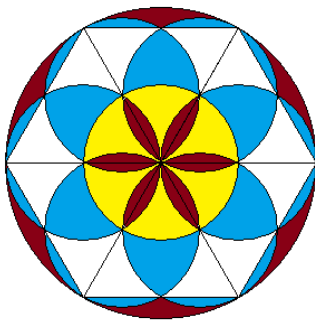
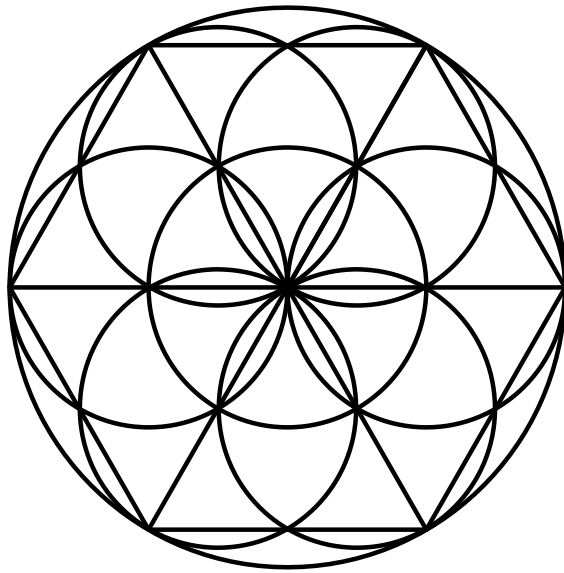
B

You will need to construct:
 An inscribed regular hexagon
 Inscribed equilateral triangles
 Midpoints



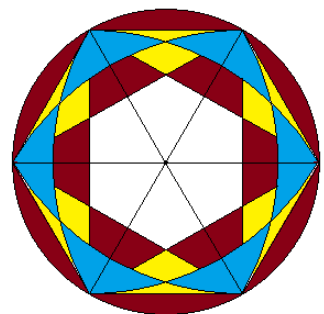
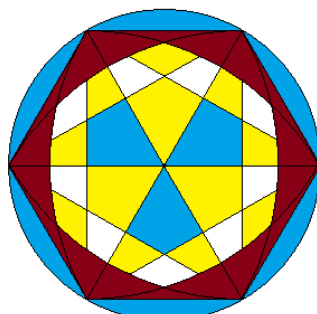
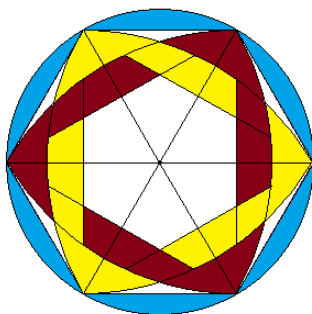
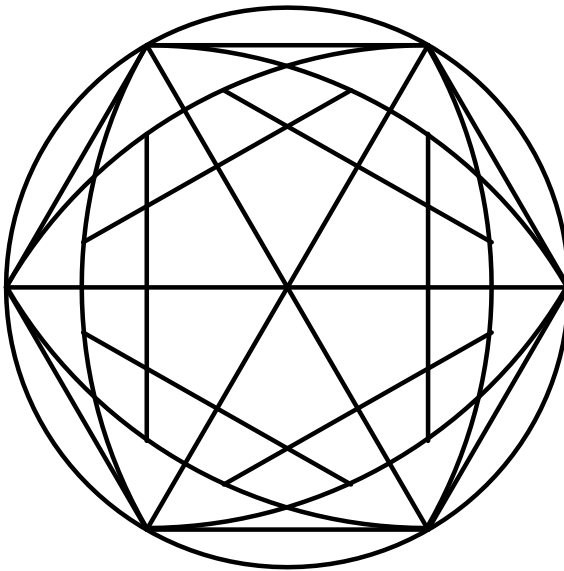
C

You will need to construct:
An inscribed regular hexagon
Midpoints

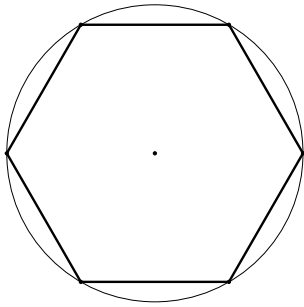


D

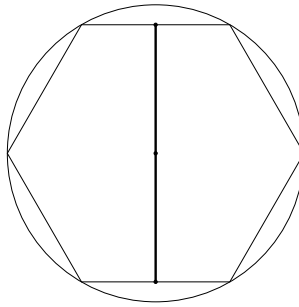
You will need to construct:
An inscribed regular hexagon
Perpendicular bisectors



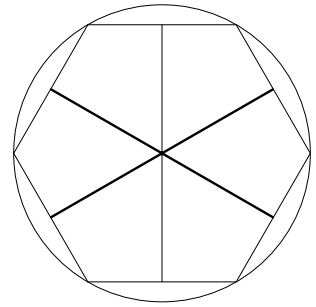
A



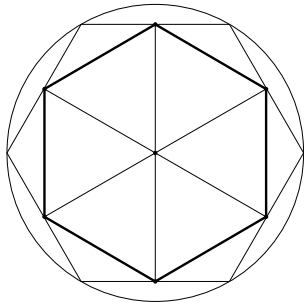
Inscribe a **regular hexagon** inside the circle.



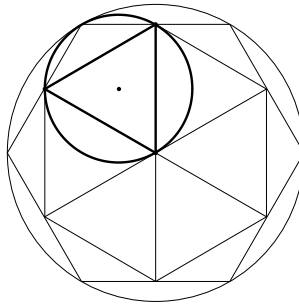
Draw a **perpendicular bisector** of one of the hexagon's sides. The bisector's endpoints should be on the hexagon.



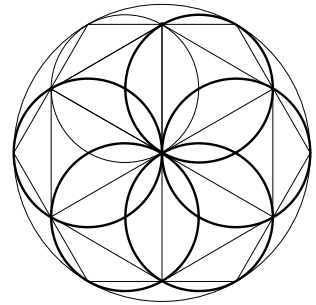
Repeat to create the other **perpendicular bisectors**.



Connect the endpoints of the bisectors to create a smaller hexagon.

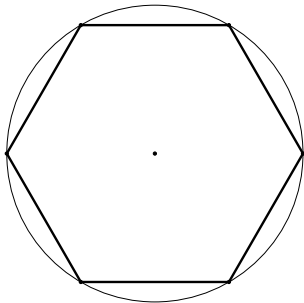


For one of the six equilateral triangles you just created, draw the **circumcircle**.

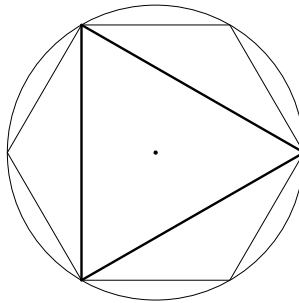


Repeat for the other small triangles.

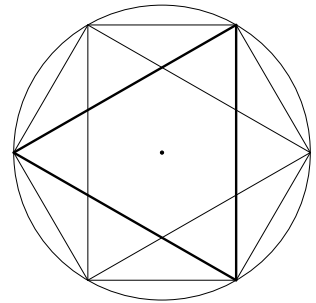
B



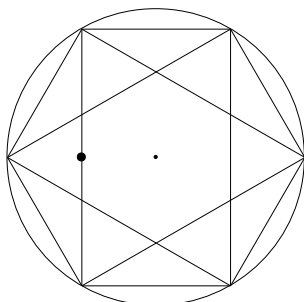
Inscribe a **regular hexagon** inside the circle.



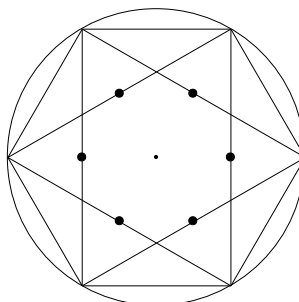
Inscribe an **equilateral triangle** inside the circle, using three of the hexagon's vertices.



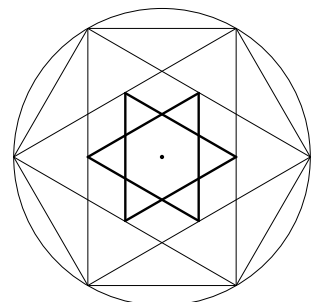
Inscribe another **equilateral triangle** inside the circle, using the other three vertices of the hexagon.



Find the **midpoint** of one of the triangle's sides.

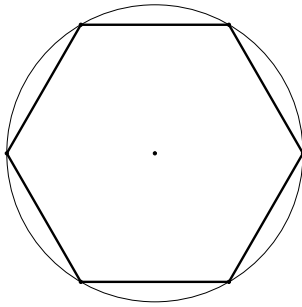


Repeat to find the other **midpoints**.

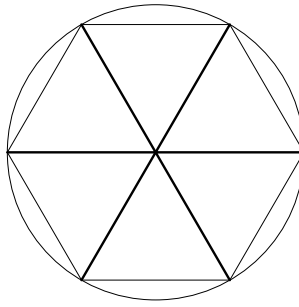


Connect these points, as shown, to create two overlapping equilateral triangles.

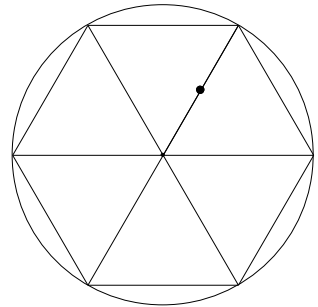
C



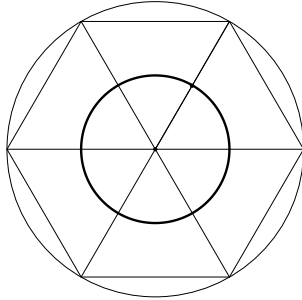
Inscribe a regular hexagon inside the circle.



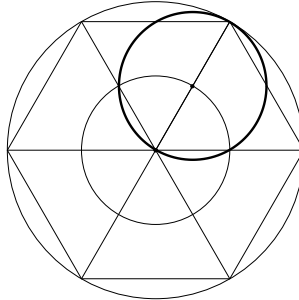
Connect the hexagon's vertices to draw three diameters of the circle.



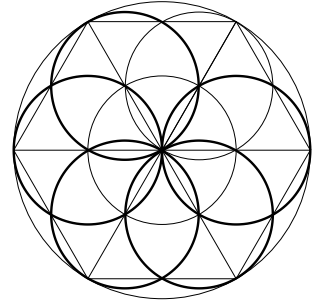
Find the **midpoint** of one of the radii you have drawn.



Draw a circle that goes through the midpoint you just found.

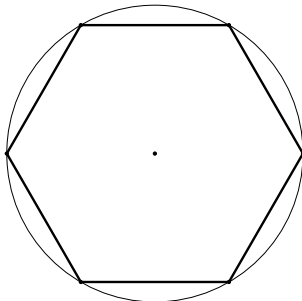


Where this circle intersects a radius, draw a new circle as shown.

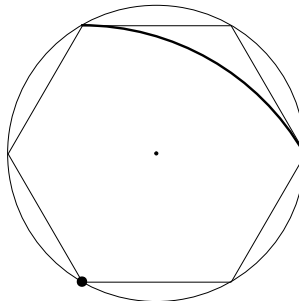


Repeat to draw five more overlapping circles.

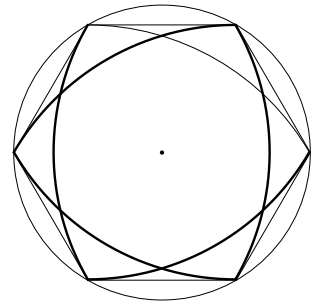
D



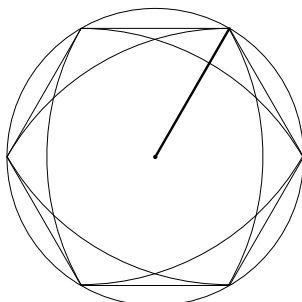
Inscribe a regular hexagon inside the circle.



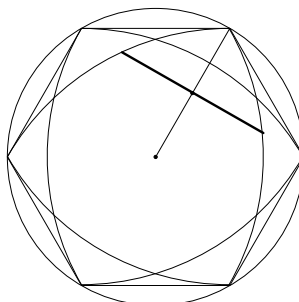
Put your compass's center on one of the hexagon's vertices, and draw an arc through two other vertices, as shown.



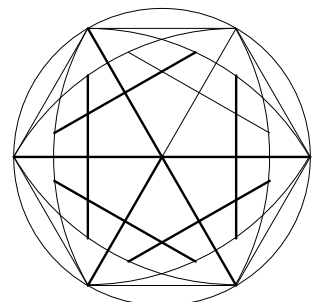
Repeat to draw five more arcs.



Use one of the hexagon's vertices to draw a radius of the circle.



Construct this radius's **perpendicular bisector**. The endpoints of the bisector should be on the arcs you drew earlier.



Repeat to draw five more radii and five more perpendicular bisectors, as shown.