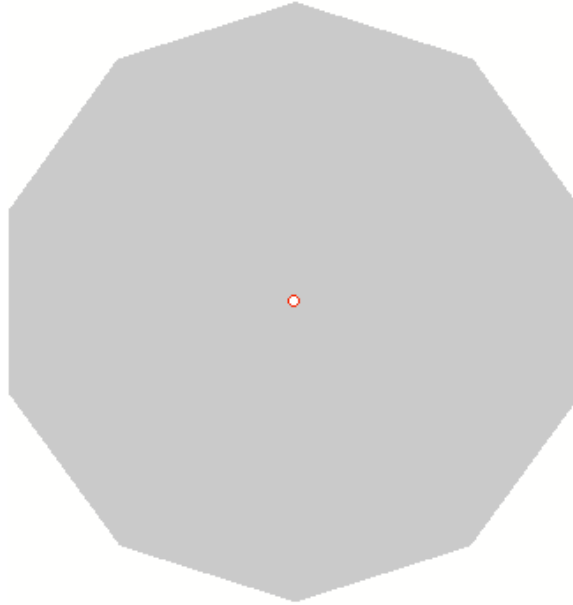


Zerlegungen des Zehneckes / Dissections of the Dekagon

1 Spielregeln

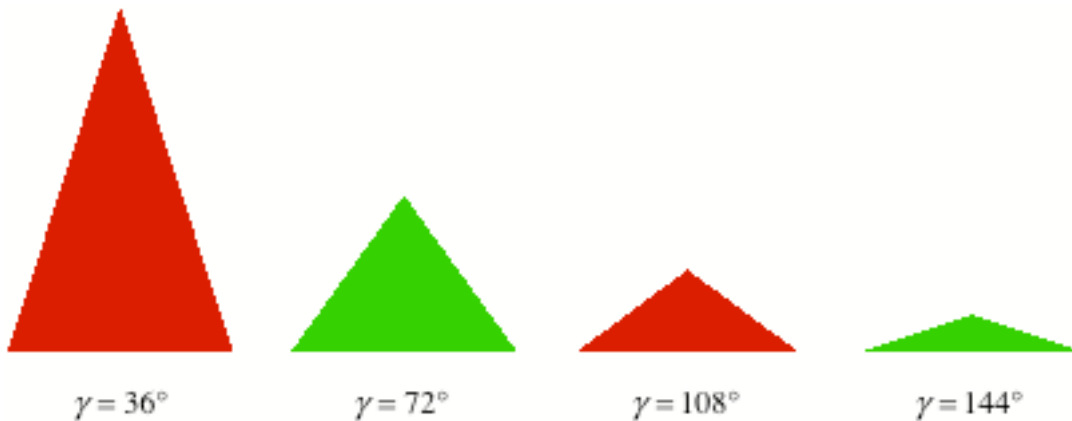


Regelmäßiges Zehneck

1.1 Gleichschenklige Dreiecke

Das regelmäßige Zehneck soll in gleichschenklige Dreiecke mit den Spitzenwinkeln 36° , 72° , 108° oder 144° zerlegt werden. Die Größe der Dreiecke spielt keine Rolle.

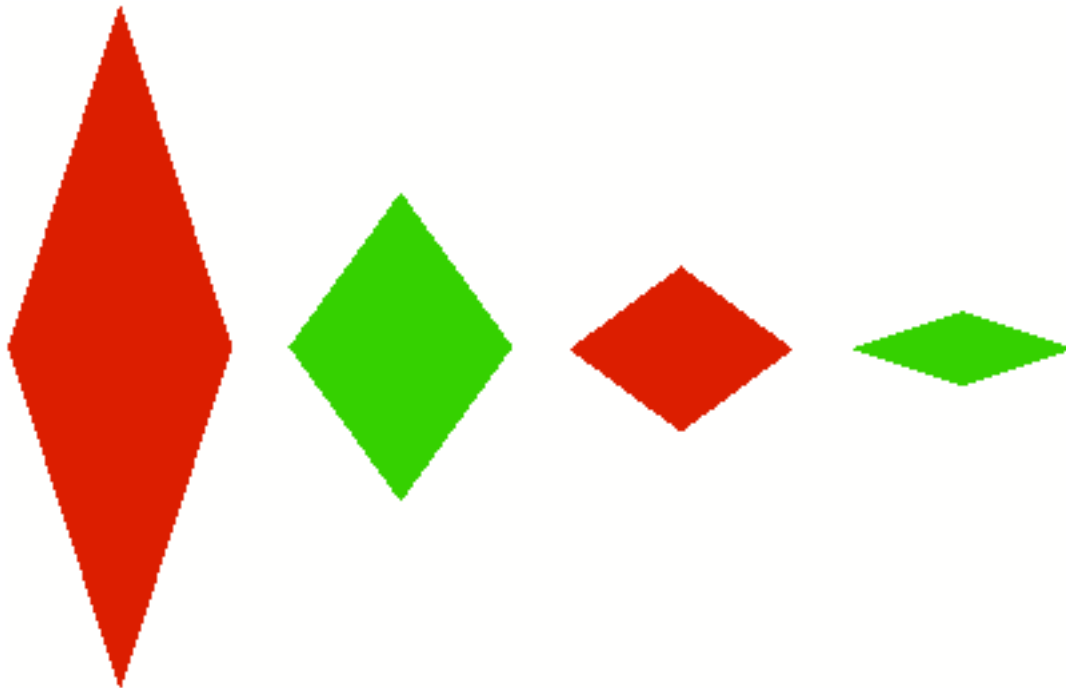
Die Dreiecke mit den Spitzenwinkeln 36° oder 108° werden oft als *goldene Dreiecke* bezeichnet; ihre Seitenverhältnisse stehen im goldenen Schnitt (vgl. [Walser 2004, S. 34]).



Die Bauteile

1.2 Erweitertes Sortiment

Aus zwei kongruenten gleichschenkligen Dreiecken können wir einen Rhombus zusammensetzen. Es ist daher sinnvoll, auch diese Rhomben als direkte Bauteile zuzulassen. Wir haben dann Rhomben mit den spitzen Winkeln 36° und 72° . Dreiecke mit $\gamma=36^\circ$ und $\gamma=144^\circ$ ergeben Rhomben derselben Form, ebenso Dreiecke mit $\gamma=72^\circ$ und $\gamma=108^\circ$.



Rhomben

Aus fünf gleichschenkligen Dreiecken mit $\gamma=72^\circ$ lässt sich das regelmäßige Fünfeck zusammensetzen. Auch dieses soll ein zulässiger Bauteil sein.

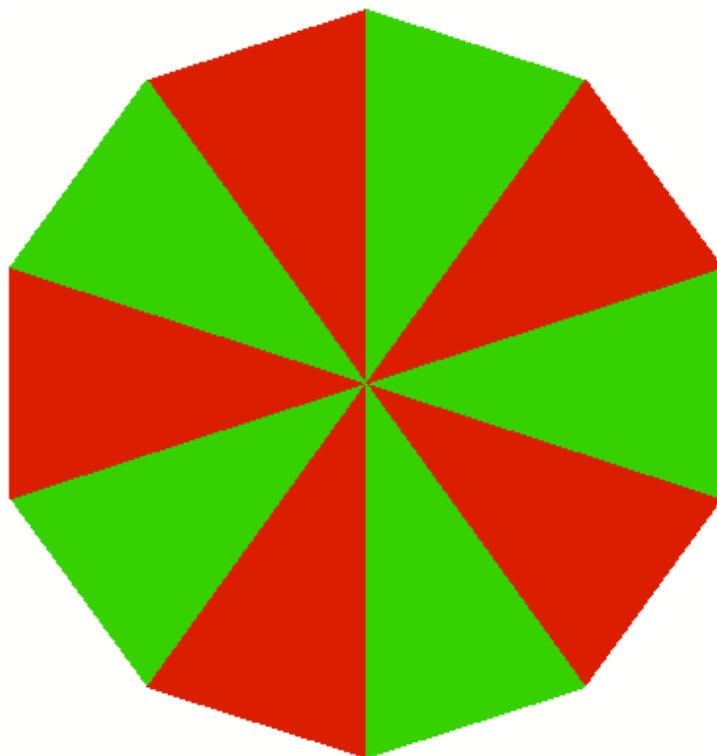
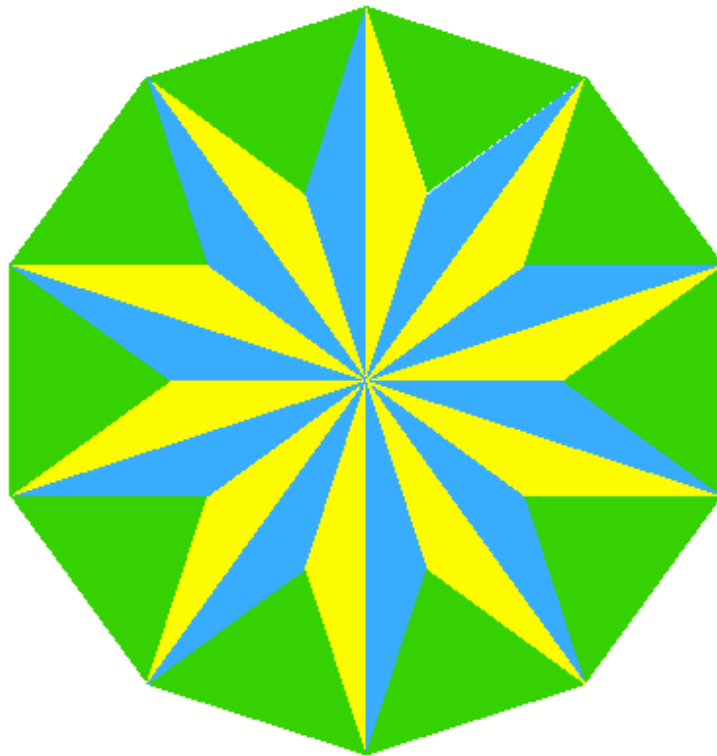


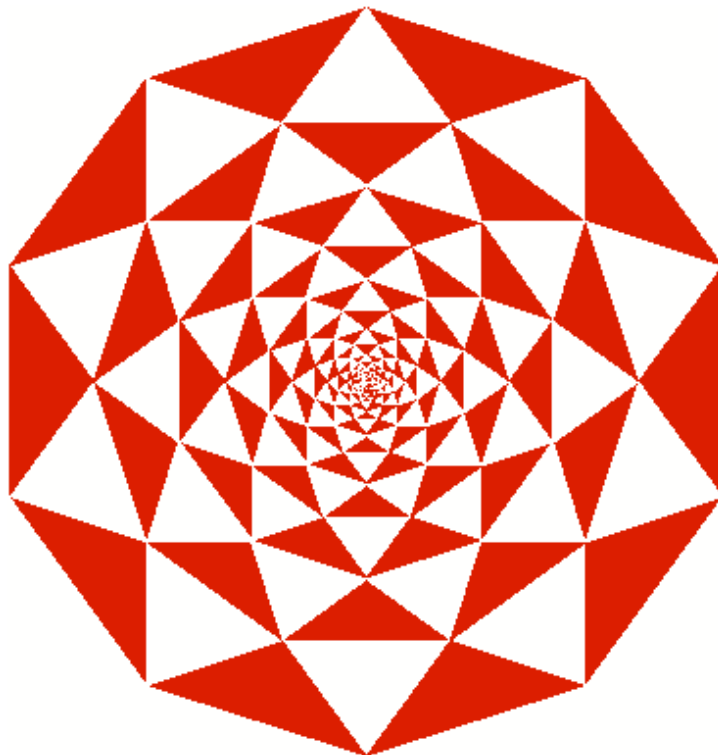
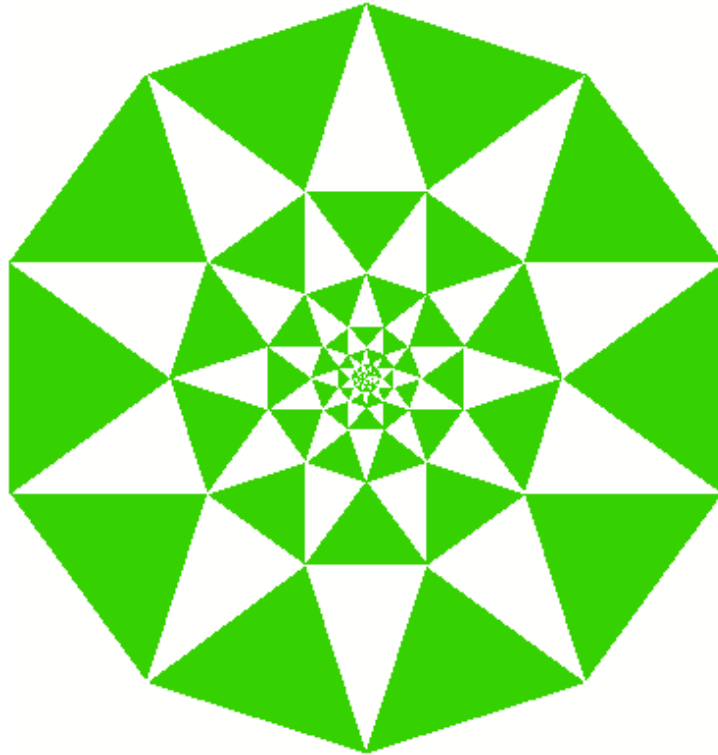
Fünfeck

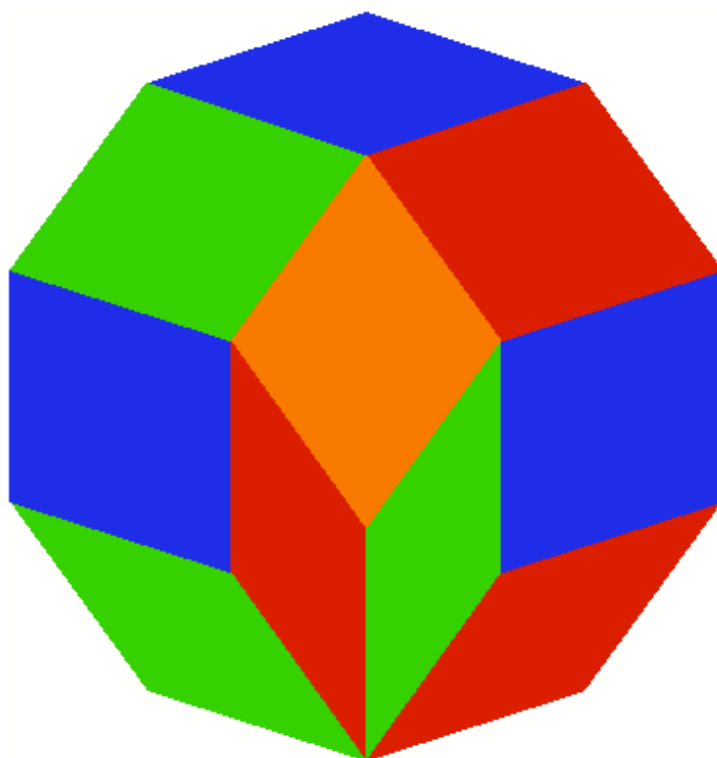
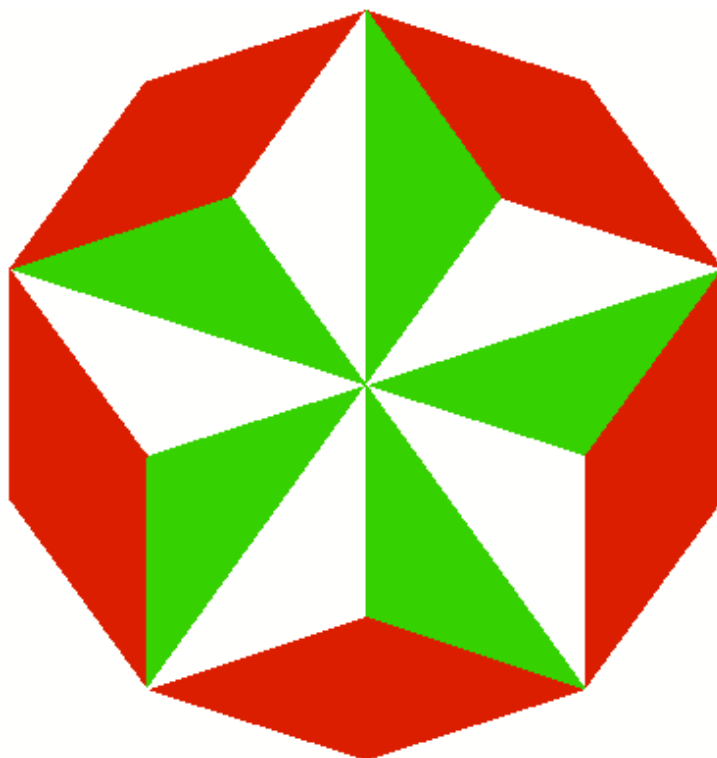
2 Zeichentechnik

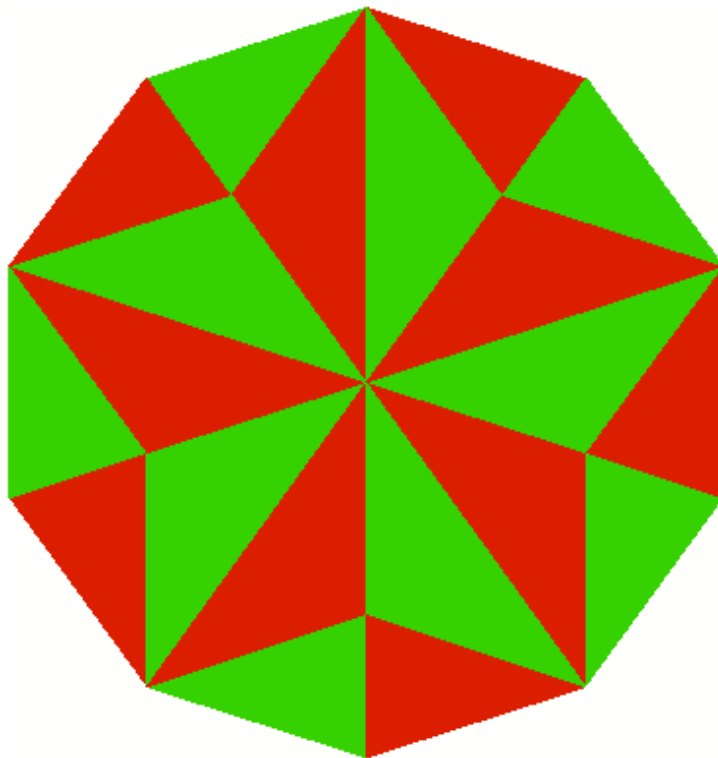
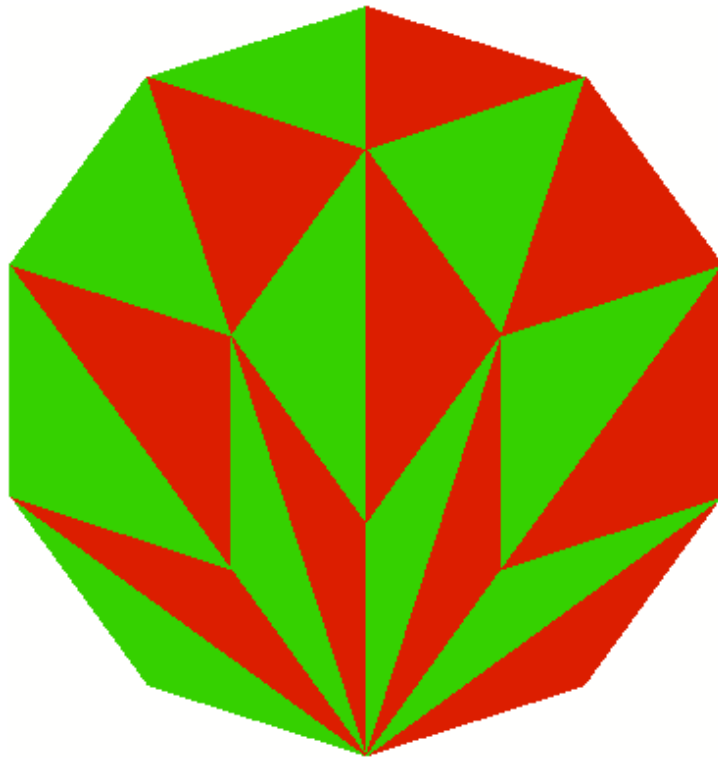
Die Figuren können mit dynamischer Geometrie-Software gezeichnet werden. Mit Vorteil generiert man für die Bauteile Makros in mehreren Farben.

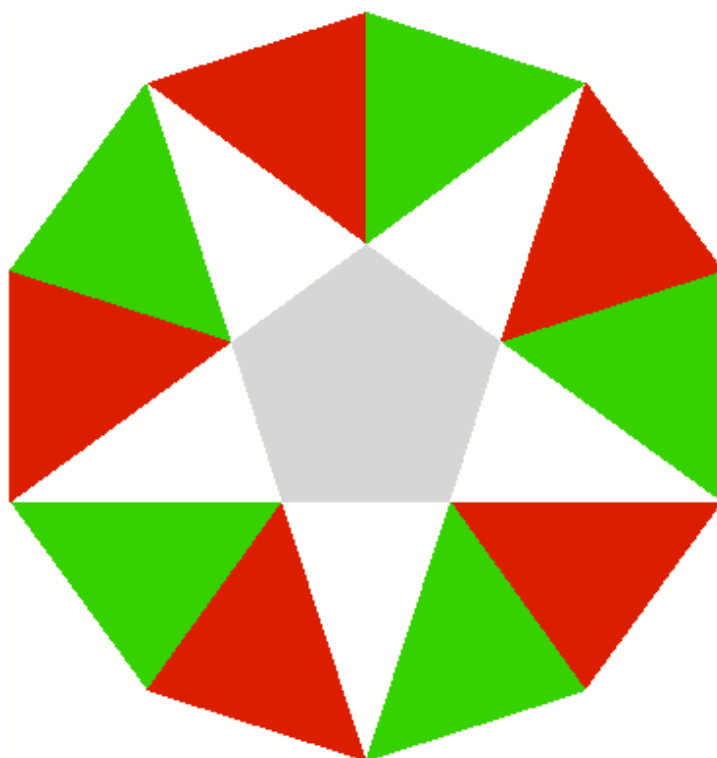
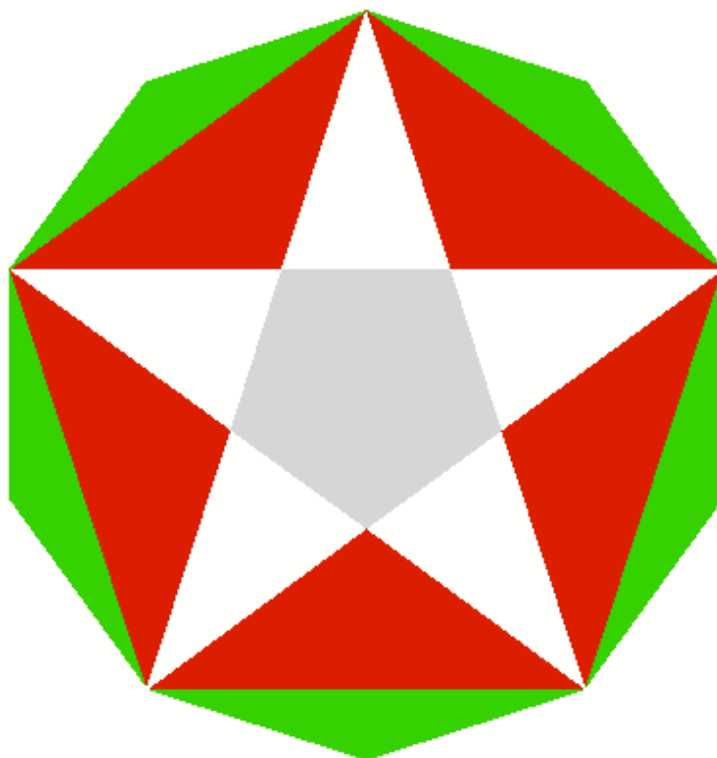
3 Beispiele

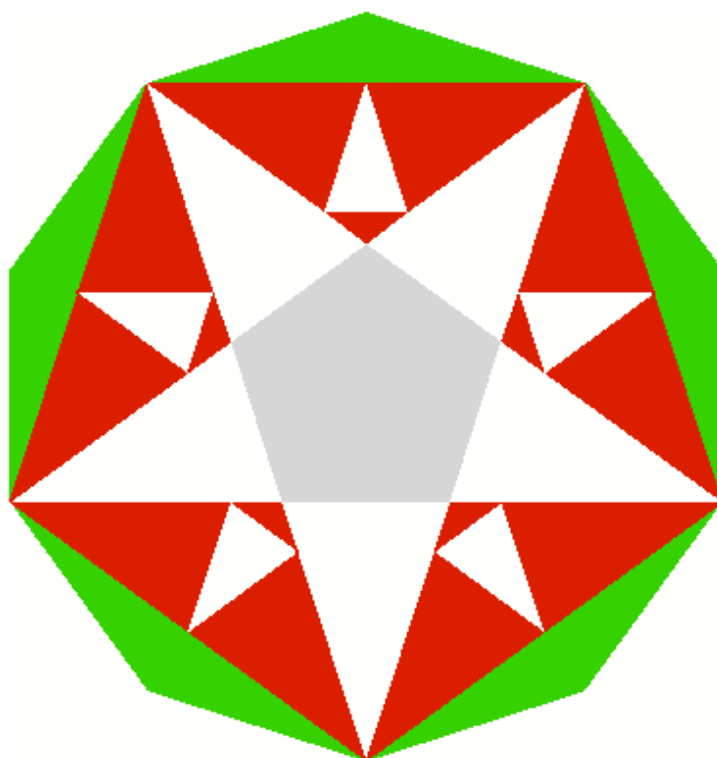
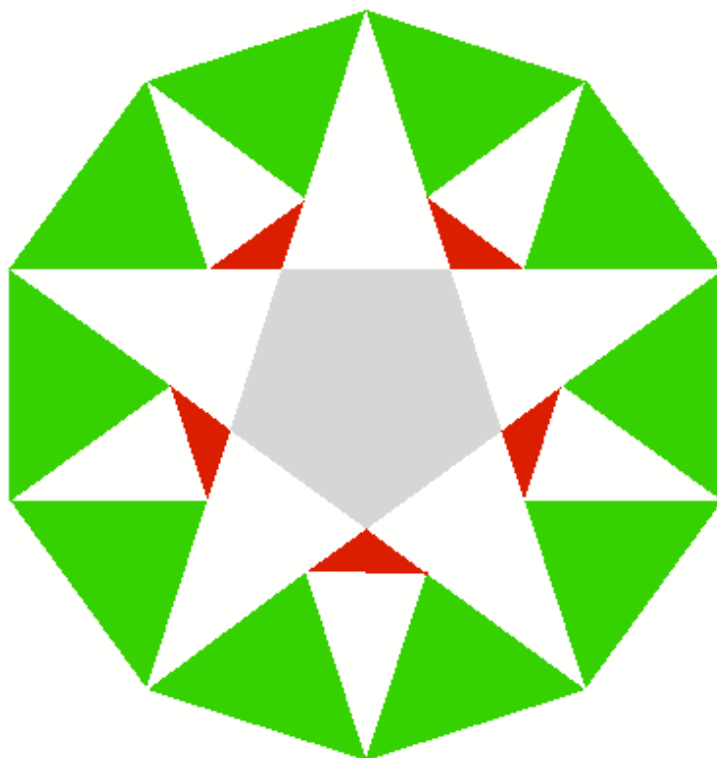


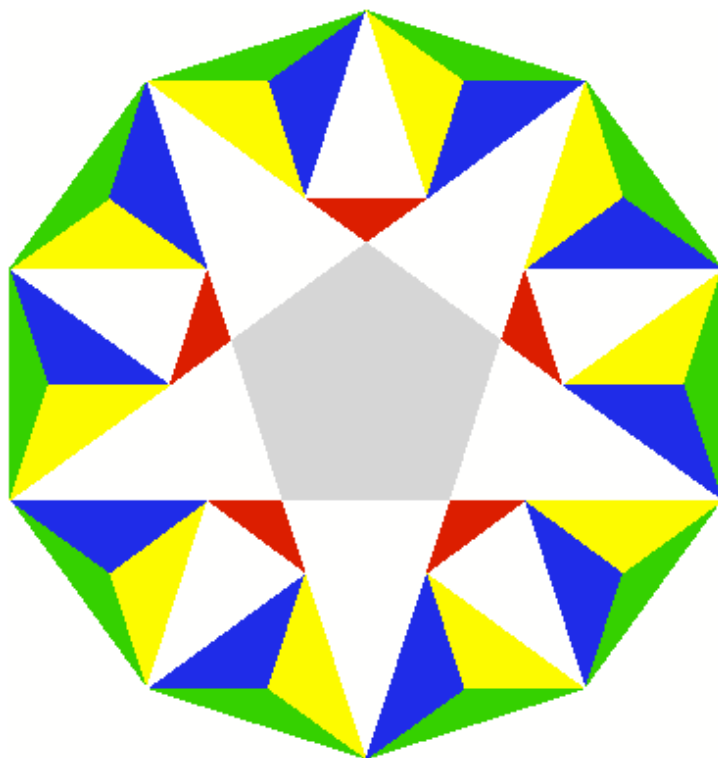
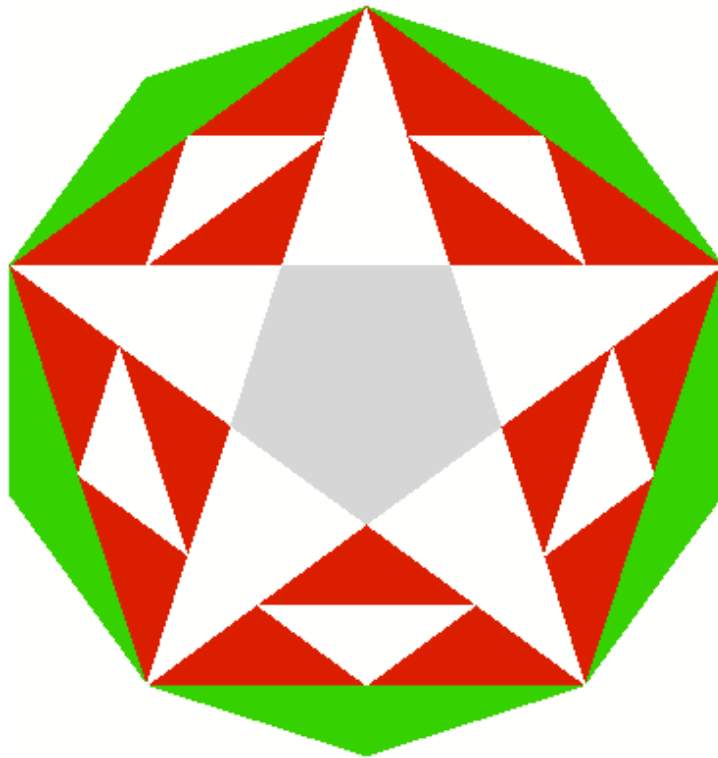


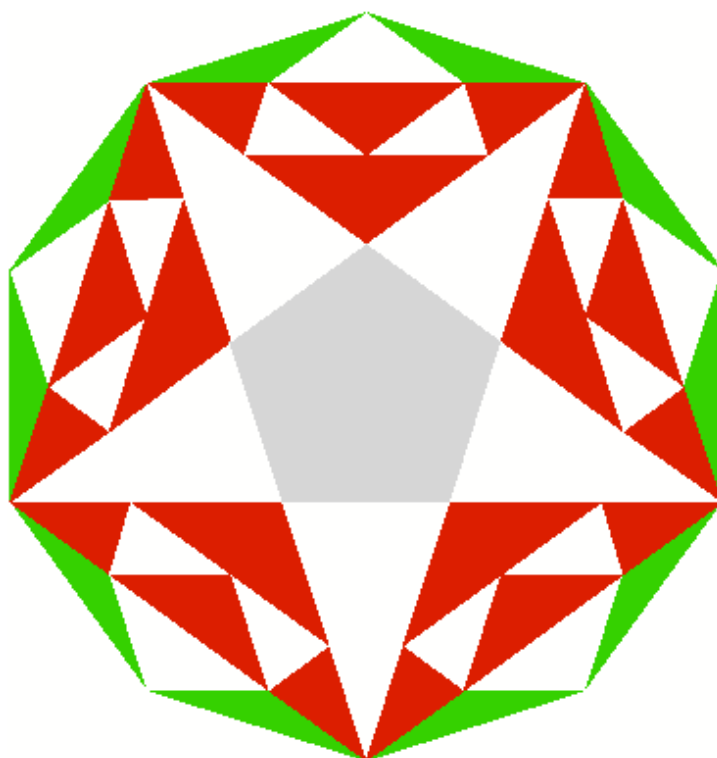
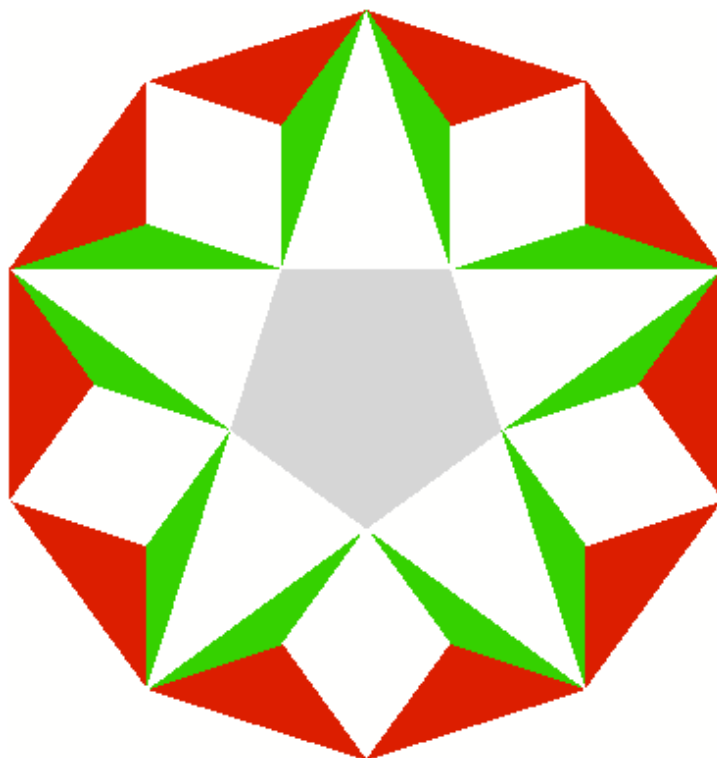


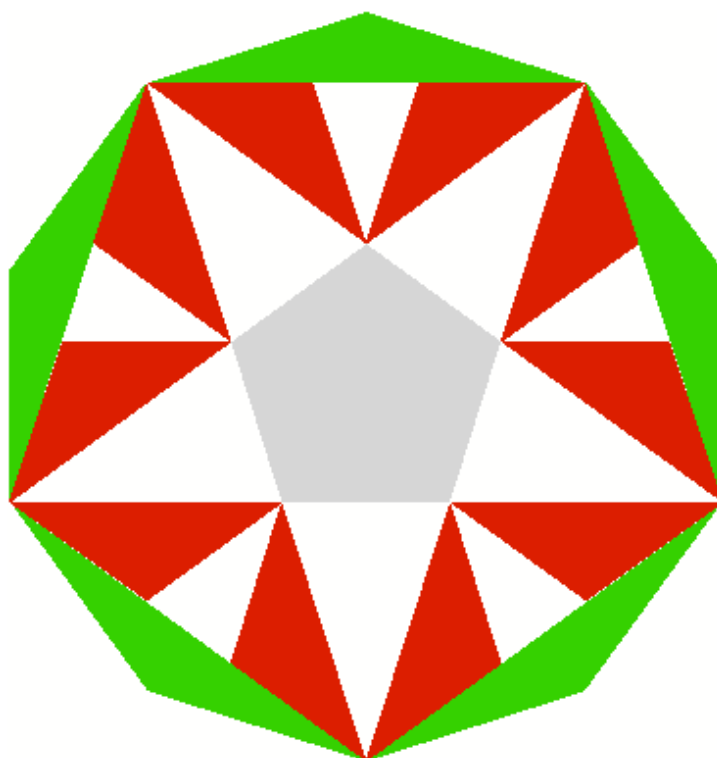
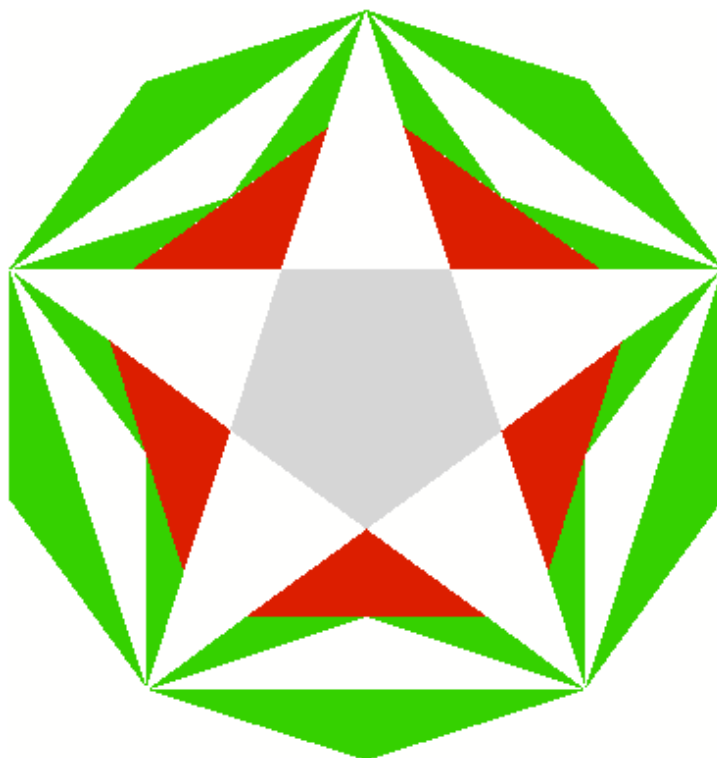


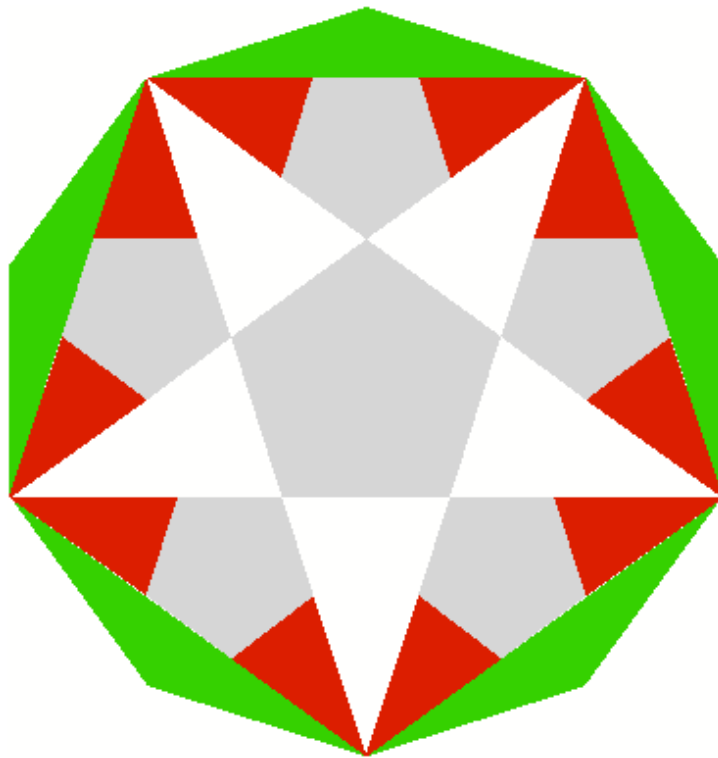
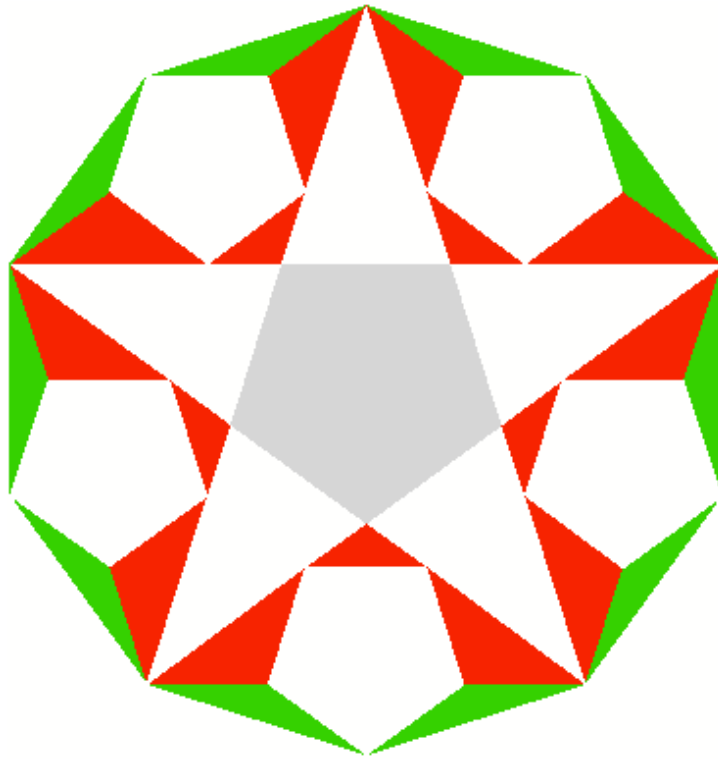


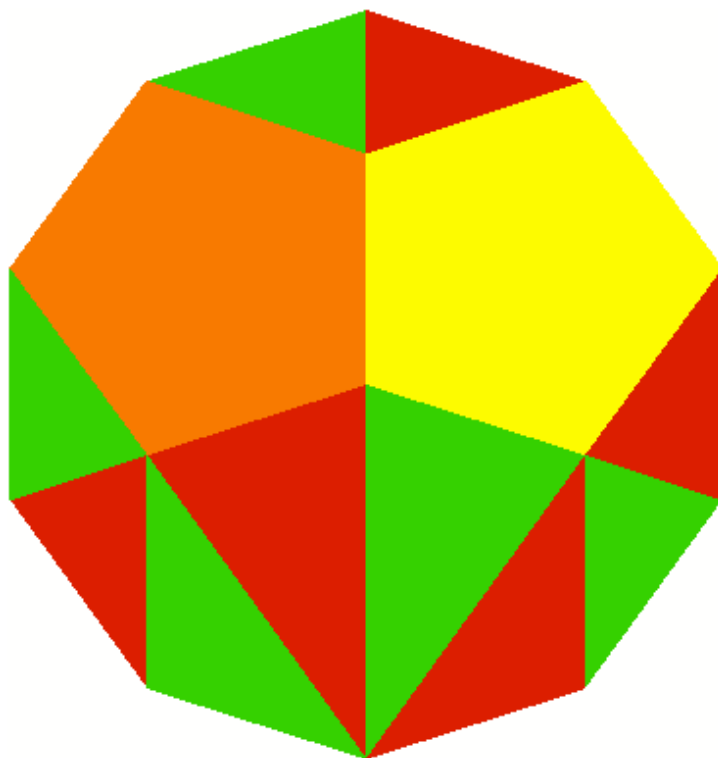
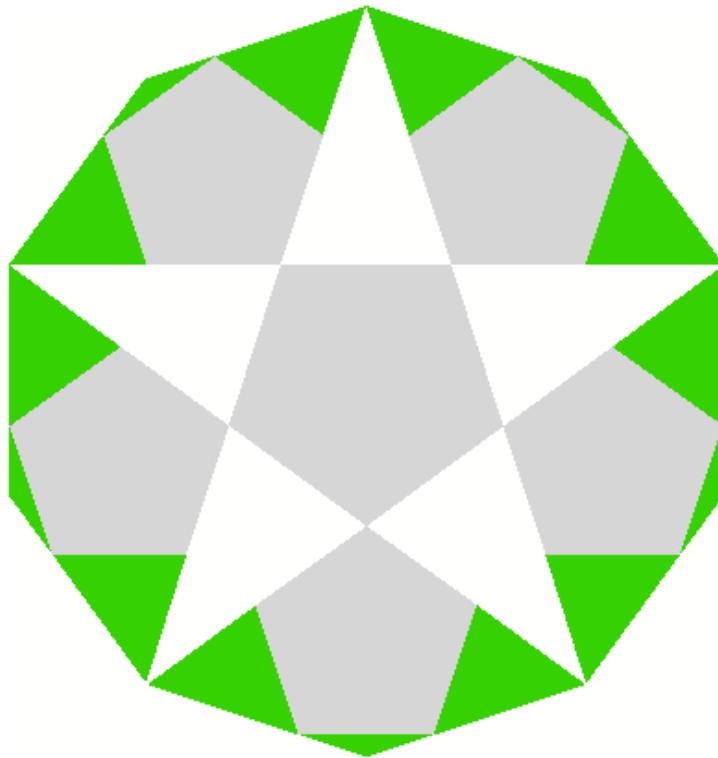


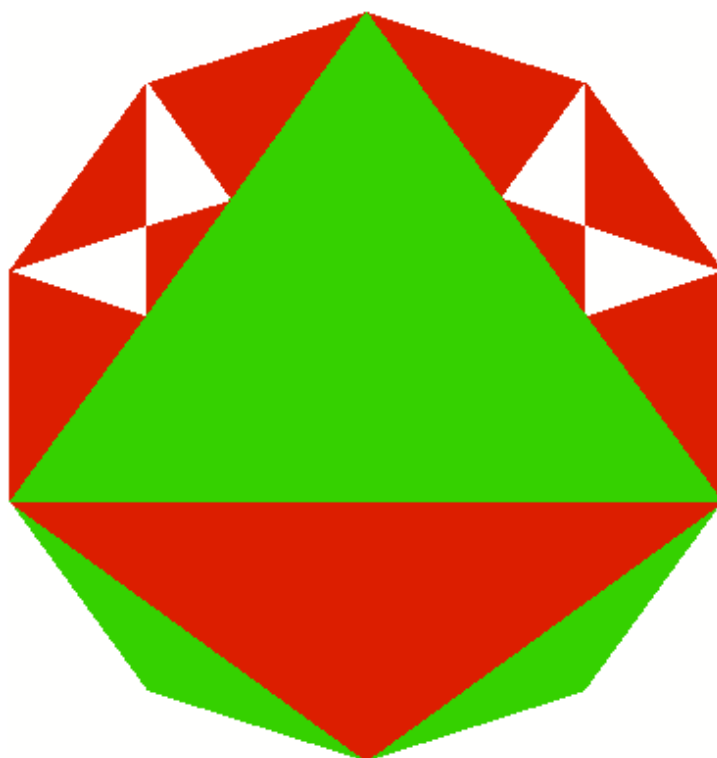
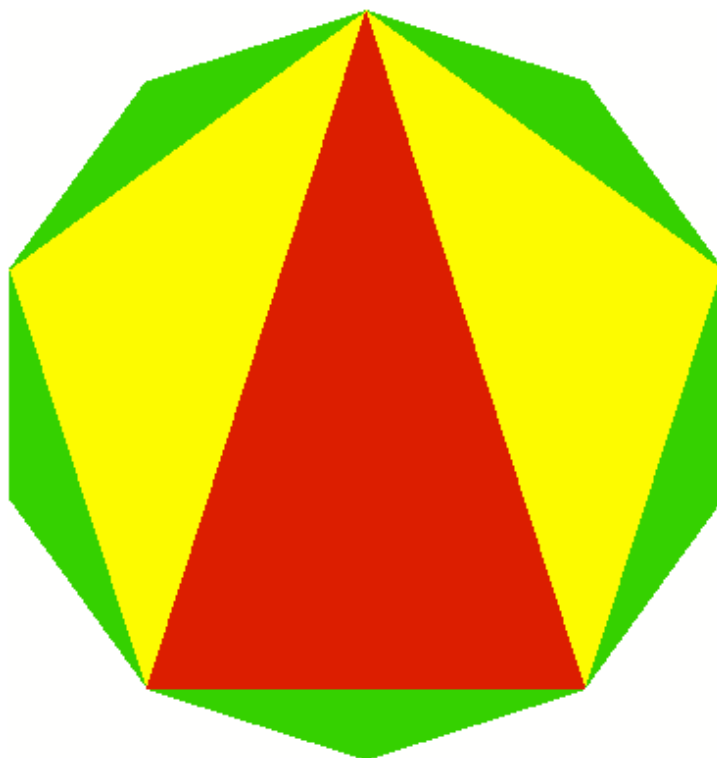


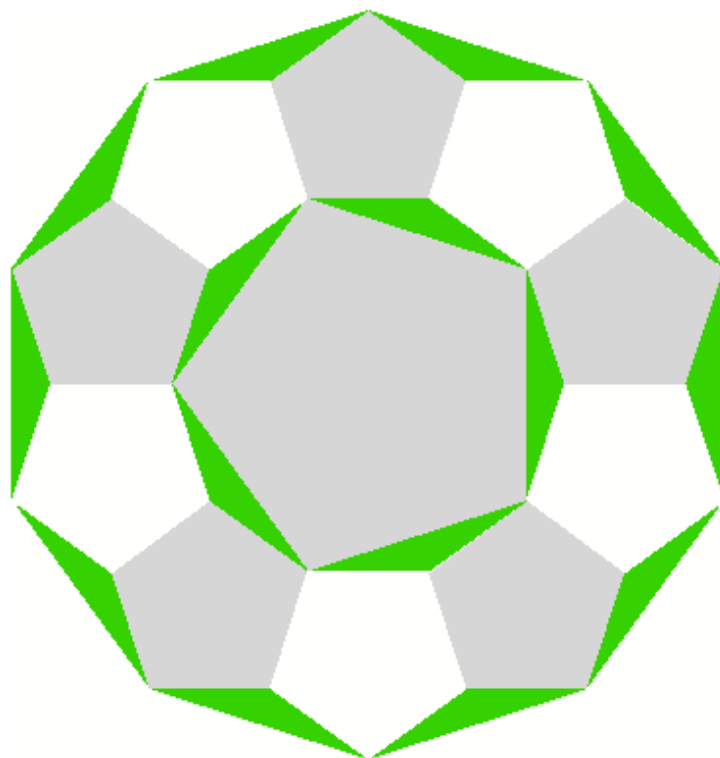
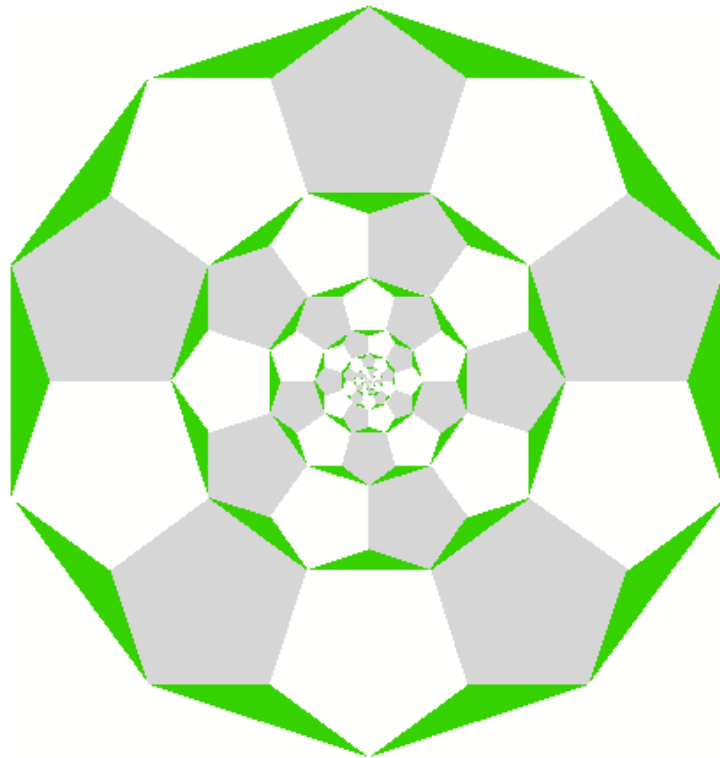


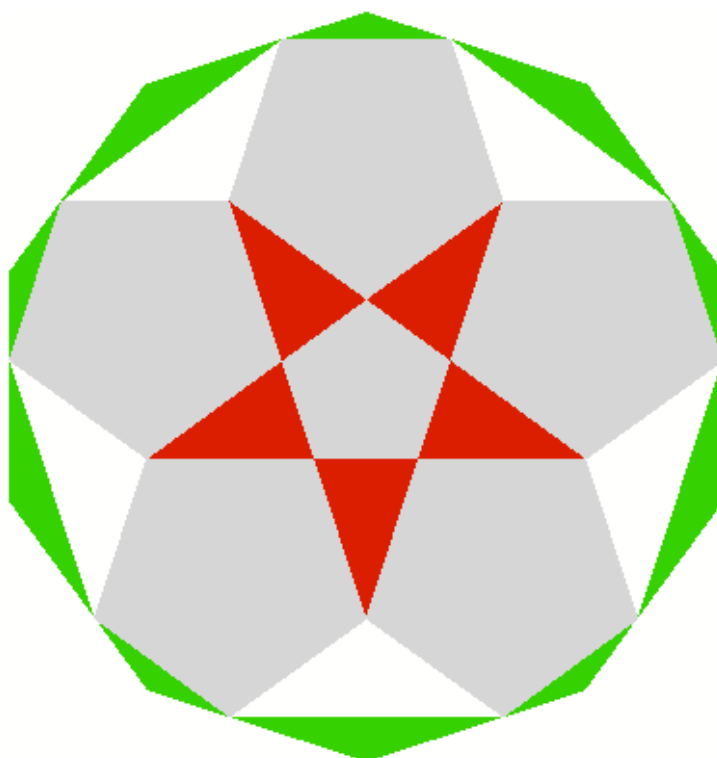
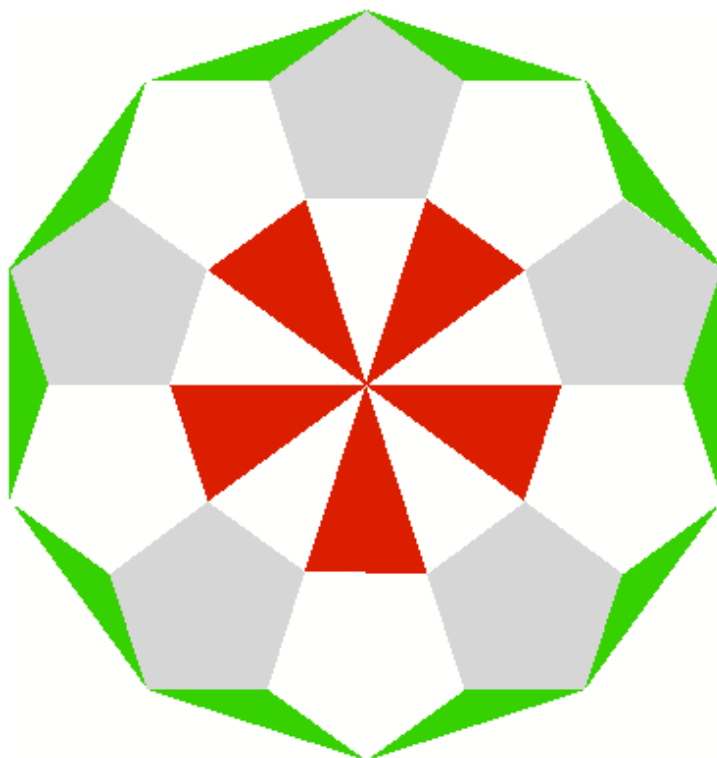


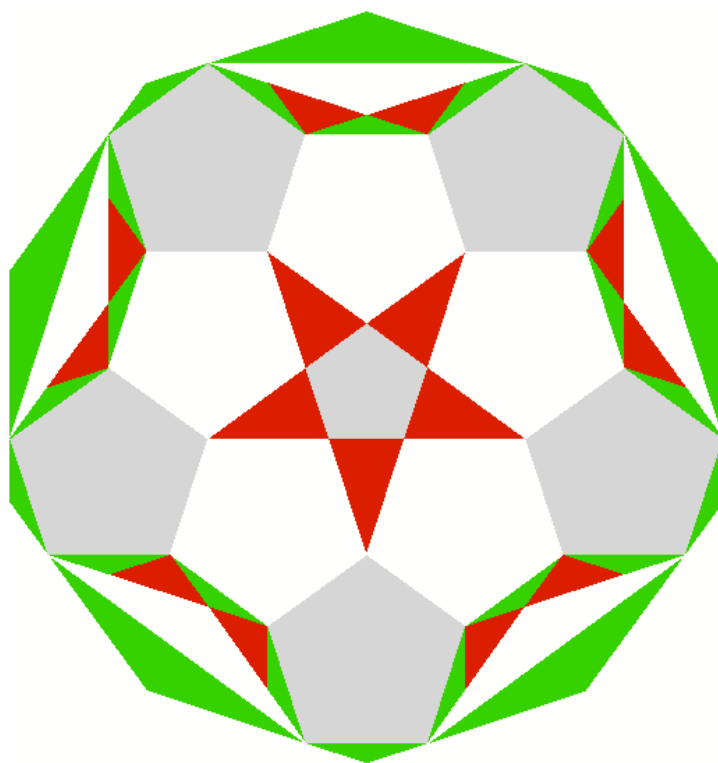
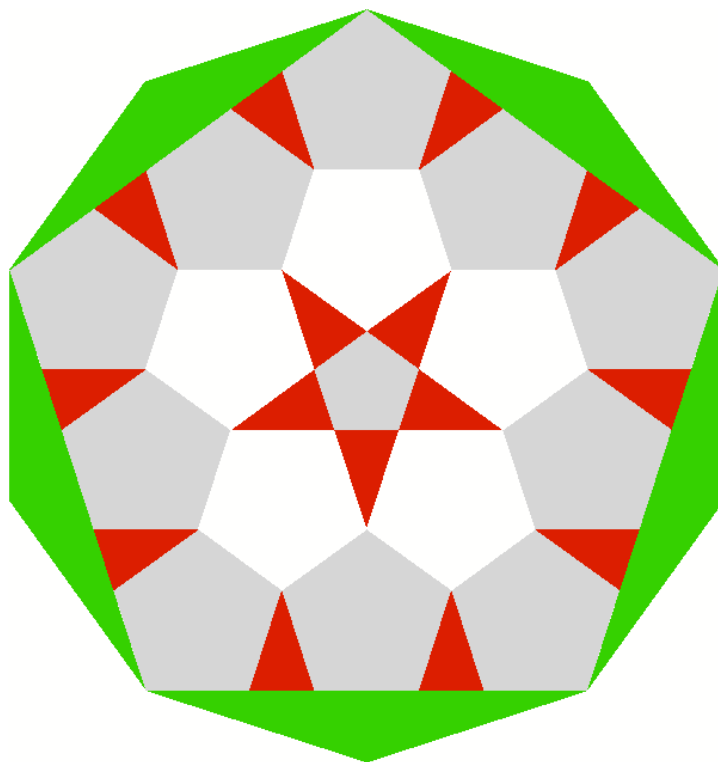


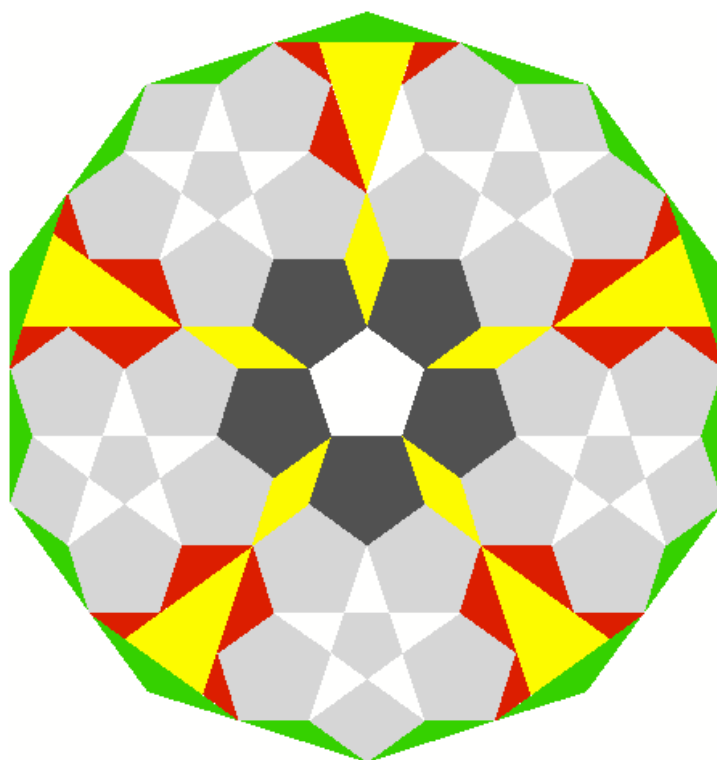
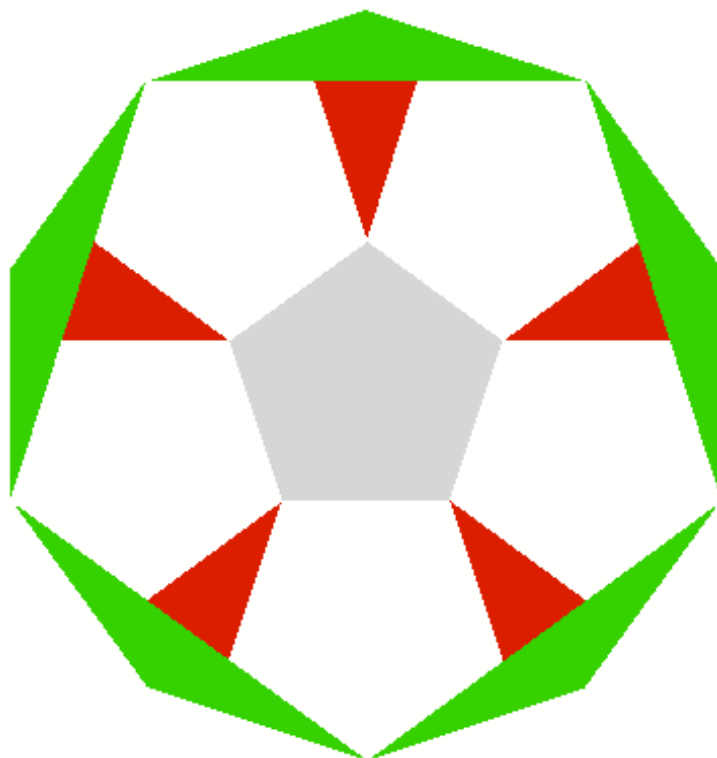


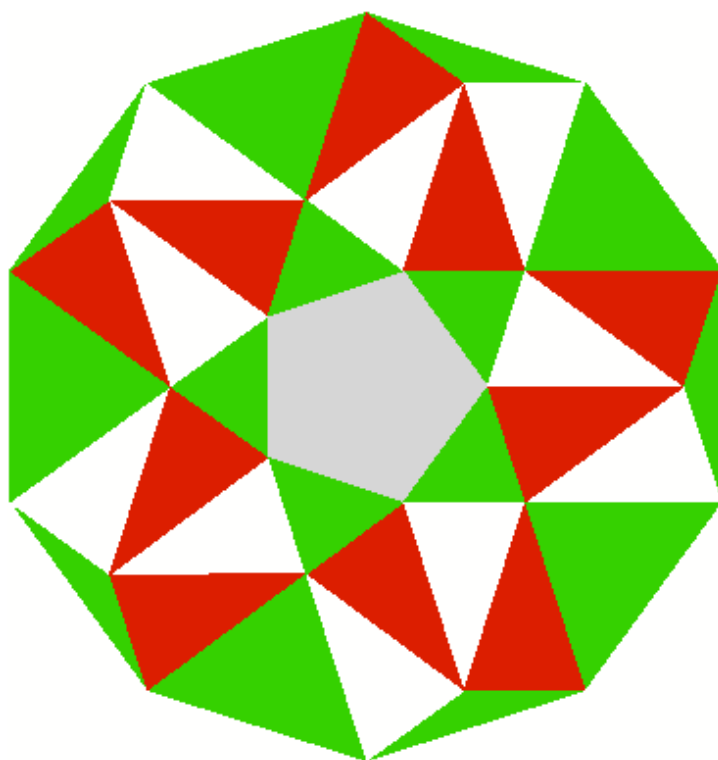
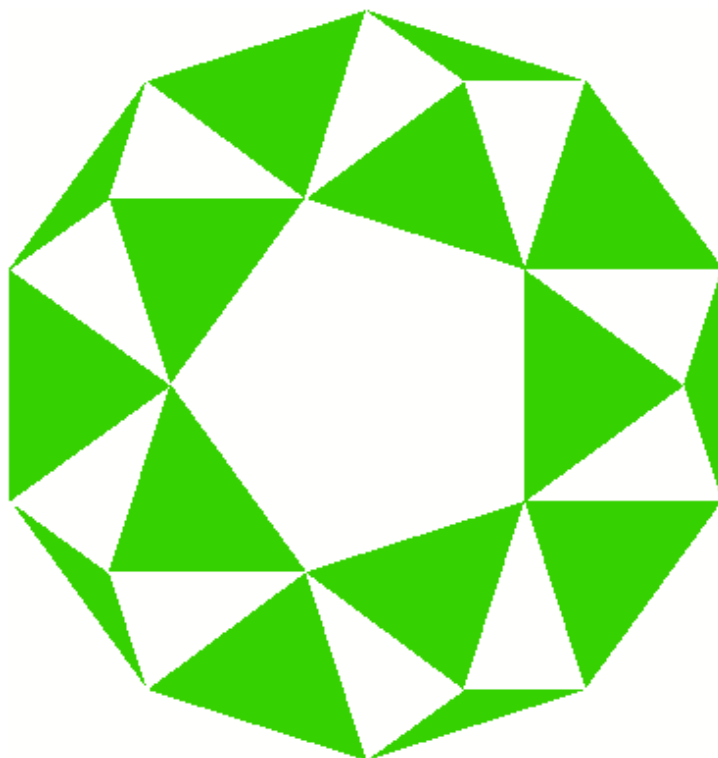


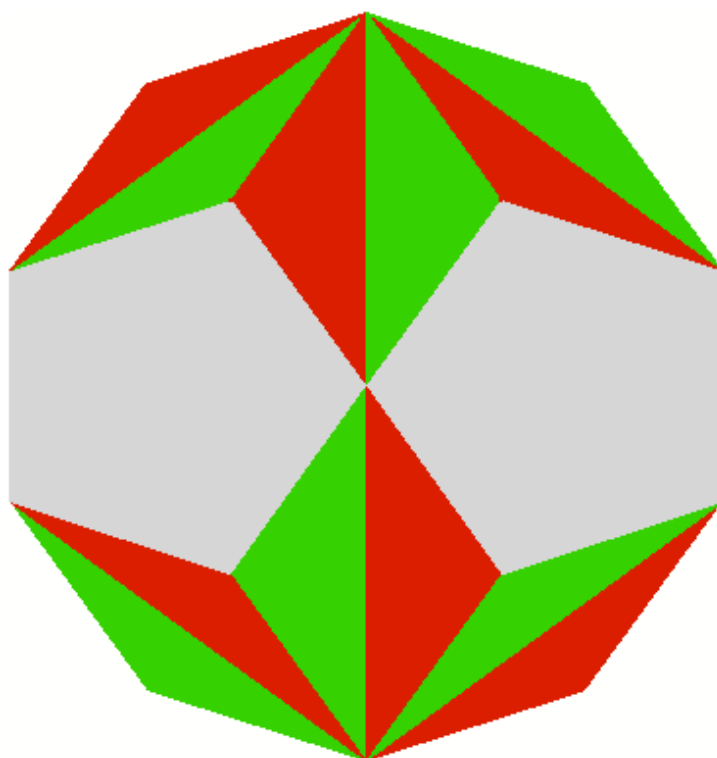
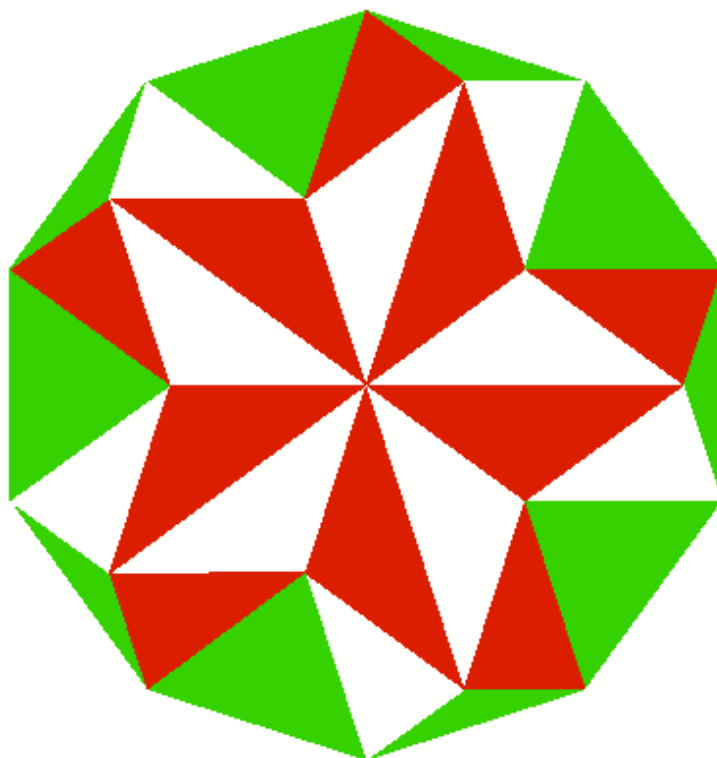


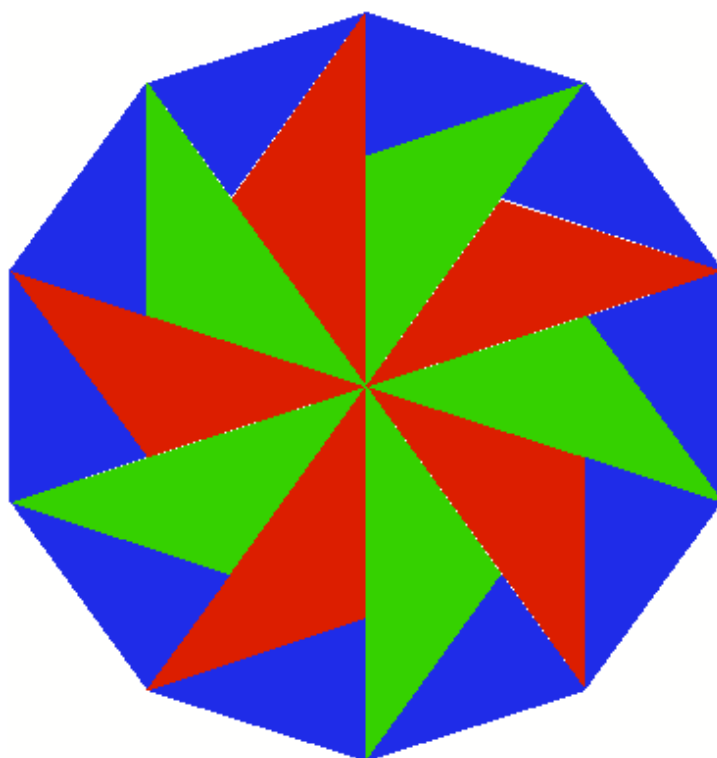
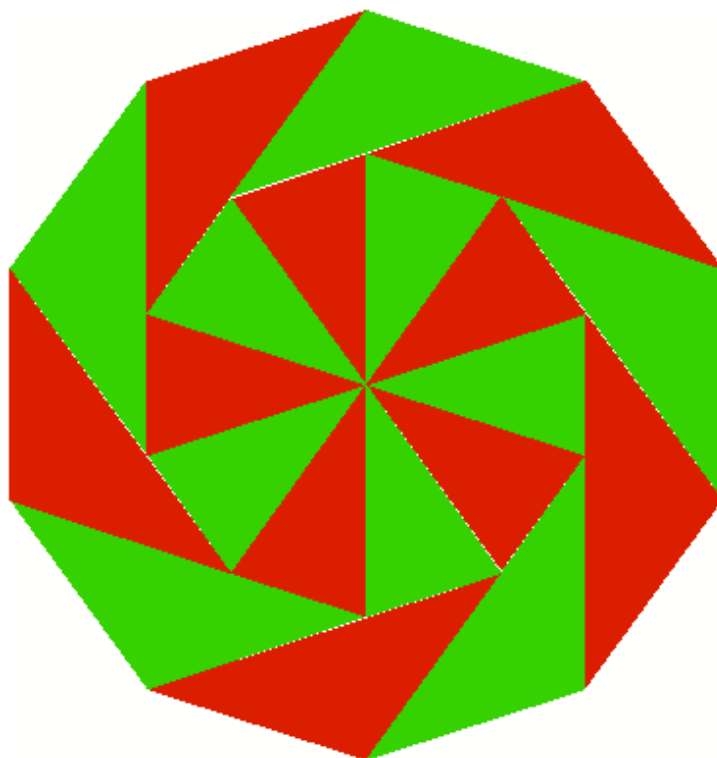


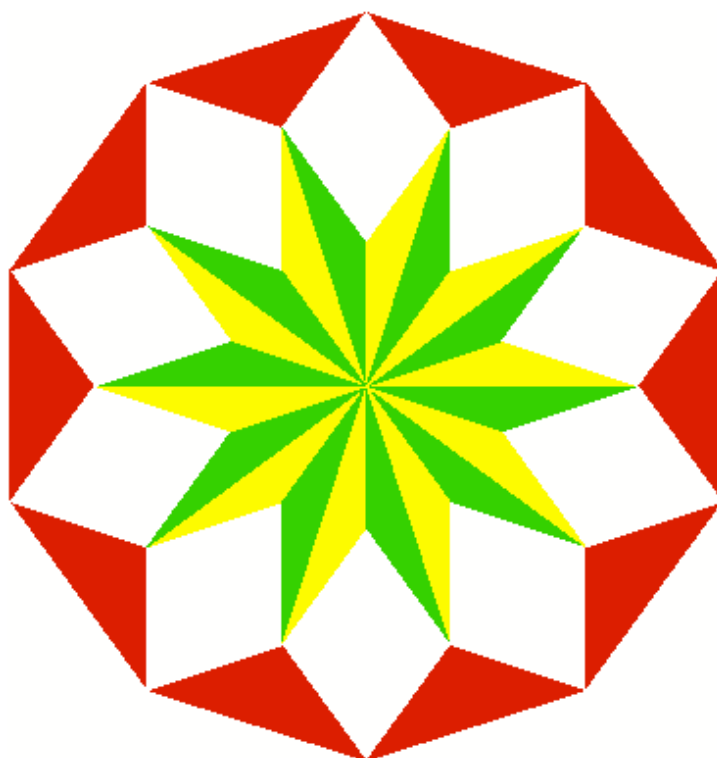
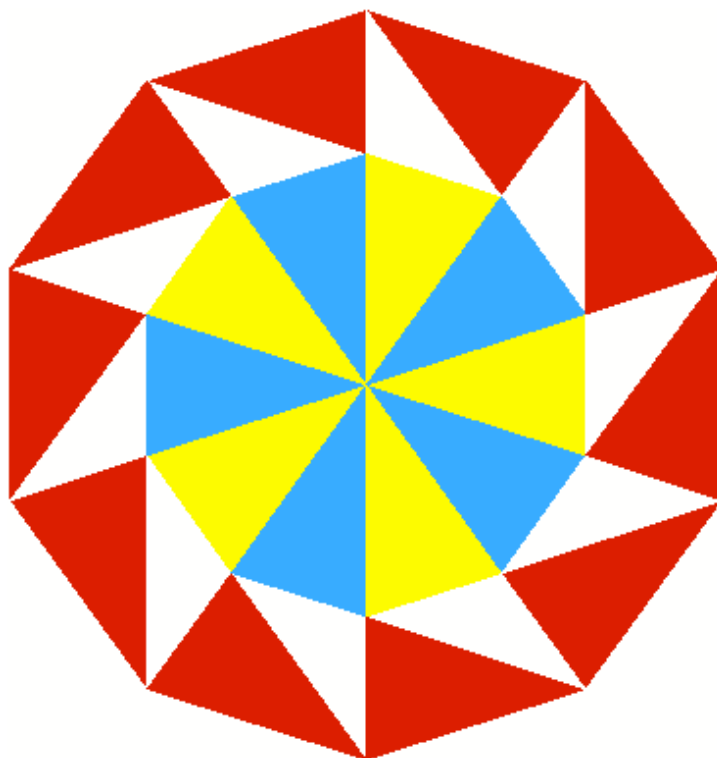


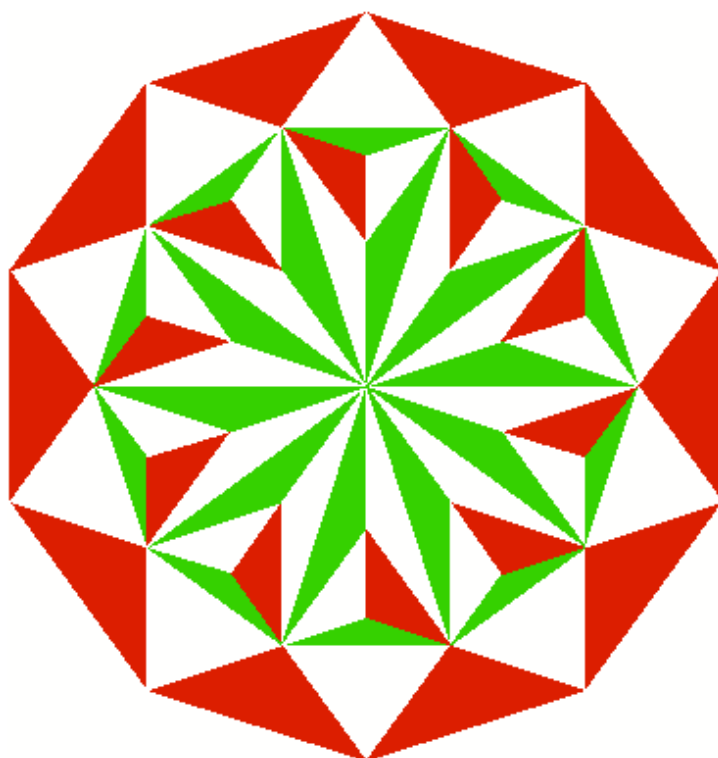
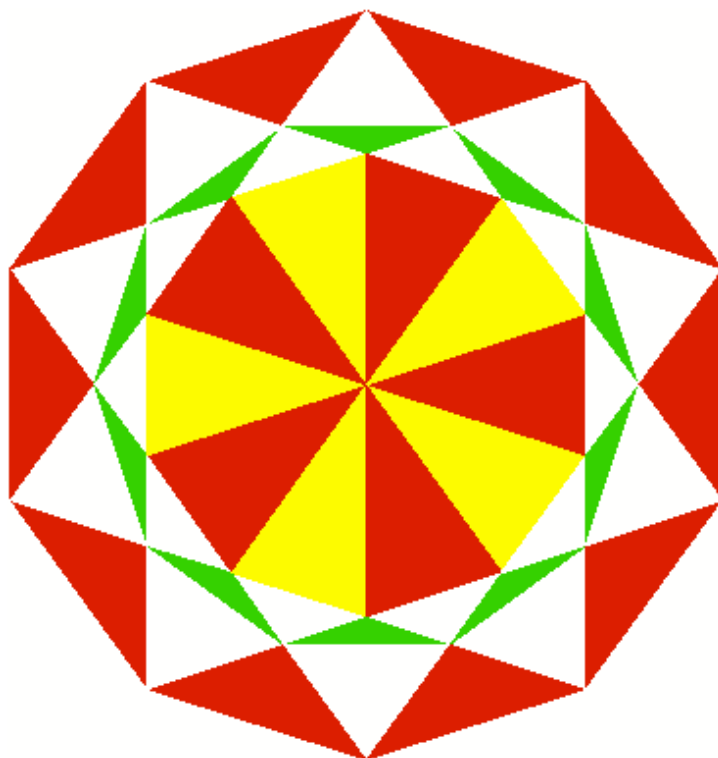


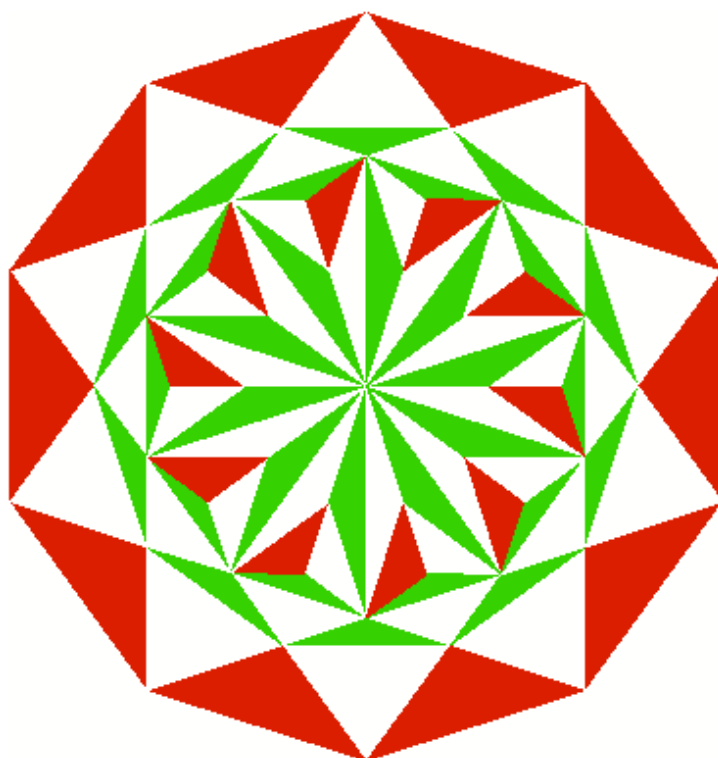
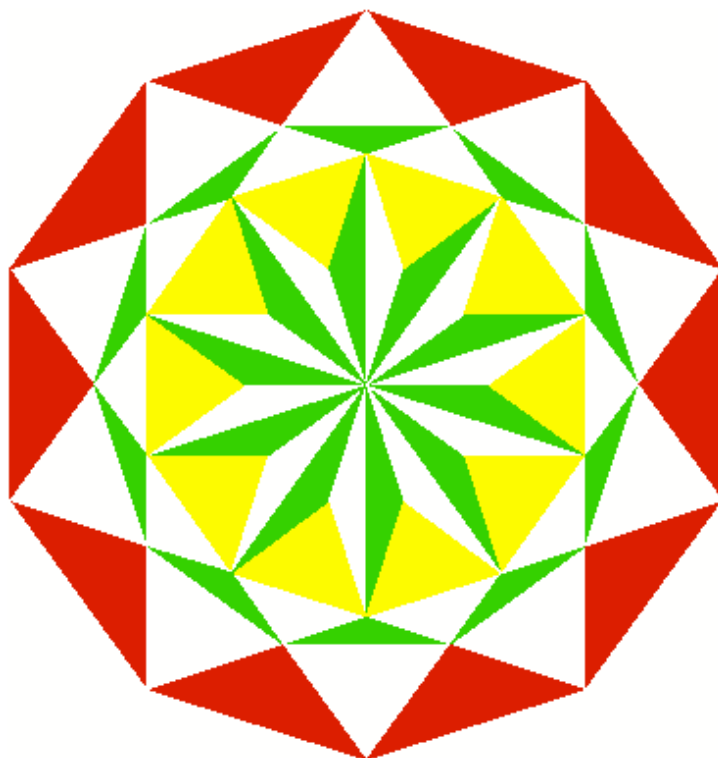


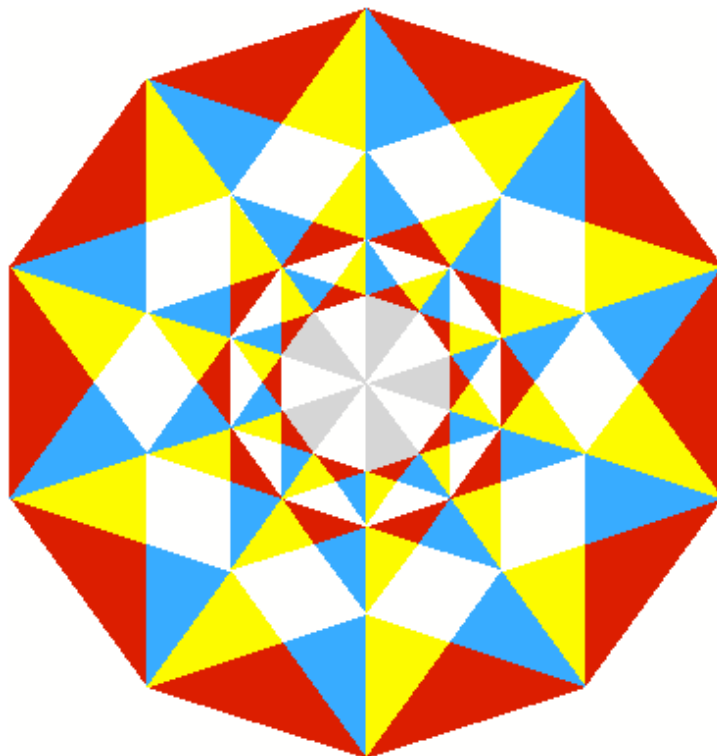












Literatur

[Walser 2004]

Walser, Hans: Der Goldene Schnitt. 4. Auflage. Leipzig: Edition am Gutenbergplatz 2004. ISBN 3-937219-00-5