## Pencil and Ruler Exercise: Changing $\boldsymbol{n}$ (number of vertices in polygon)

 with fixed $\boldsymbol{S}$ (subdivisions (equally spaced segments) between vertices), $\boldsymbol{P}$ (subdivisions between points) and $J$ (polygonal vertex jumps)FACT: All four subdivision dot-plots have the same number of $\boldsymbol{S}, \boldsymbol{S}=$ $\qquad$ , and the same number for $\boldsymbol{J}, \boldsymbol{J}=$ $\qquad$ .
Drawing Instructions: Start at the top of each circle and draw each image from point to point with pencil and ruler assuming three subdivisions between points, $\boldsymbol{P}=\mathbf{3}$.

$n=$
$\qquad$ . Does the image use all subdivision dots? $\qquad$ $n=$ $\qquad$ . Does the image use all subdivision dots? $\qquad$

$\boldsymbol{n}=$ . Does the image use all subdivision dots? $\qquad$ $\boldsymbol{n}=$ $\qquad$ . Does the image use all subdivision dots? $\qquad$
If an image did not use all subdivision dots, what fraction are used ( $1 / 2,1 / 3,1 / 4$, etc.)? (SCF is the bottom of this fraction)

