Activité : Cercle trigonométrique

En enroulant dans le sens direct

1. Périmètre : $2\pi \times 1 = 2\pi$.

2. L'arc $\overset{\frown}{IJ}$ mesure $\frac{2\pi}{4} = \frac{\pi}{2}$

   L'arc $\overset{\frown}{IK}$ mesure $\frac{2\pi}{2} = \pi$

   L'arc $\overset{\frown}{IL}$ mesure $\frac{3}{4} \times 2\pi = \frac{3\pi}{2}$.

3. $\widehat{IOA} = 30°$ $\widehat{IOB} = 45°$ $\widehat{IOC} = 60°$ $\widehat{IOD} = 120°$ $\widehat{IOE} = 135°$

   $\widehat{IOF} = 150°$ $\widehat{IOG} = 210°$ $\widehat{IOH} = 225°$ $\widehat{IOM} = 240°$ $\widehat{IOP} = 300°$

   $\widehat{IOQ} = 315°$ $\widehat{IOR} = 330°$

4. $\overset{\frown}{IA}$ mesure $\frac{30}{360} \times 2\pi = \frac{\pi}{6}$

   $\overset{\frown}{IB}$ mesure $\frac{45}{360} \times 2\pi = \frac{\pi}{4}$

   $\overset{\frown}{IC}$ mesure $\frac{60}{360} \times 2\pi = \frac{\pi}{3}$

   $\overset{\frown}{ID}$ mesure $\frac{120}{360} \times 2\pi = \frac{2\pi}{3}$

   $\overset{\frown}{IE}$ mesure $\frac{135}{360} \times 2\pi = \frac{3\pi}{4}$

   $\overset{\frown}{IF}$ mesure $\frac{150}{360} \times 2\pi = \frac{5\pi}{6}$

   $\overset{\frown}{IG}$ mesure $\frac{210}{360} \times 2\pi = \frac{7\pi}{6}$

   $\overset{\frown}{IH}$ mesure $\frac{225}{360} \times 2\pi = \frac{5\pi}{4}$

   $\overset{\frown}{IM}$ mesure $\frac{240}{360} \times 2\pi = \frac{4\pi}{3}$

   $\overset{\frown}{IP}$ mesure $\frac{300}{360} \times 2\pi = \frac{5\pi}{3}$

   $\overset{\frown}{IQ}$ mesure $\frac{315}{360} \times 2\pi = \frac{7\pi}{4}$

   $\overset{\frown}{IR}$ mesure $\frac{330}{360} \times 2\pi = \frac{11\pi}{6}$

Prenons le problème à l'envers.

$\frac{37\pi}{4} = \frac{32\pi}{4} + \frac{5\pi}{4}$
$= 4 \times 2\pi + \frac{5\pi}{4}$

$\frac{19\pi}{3} = \frac{18\pi}{3} + \frac{\pi}{3}$
$= 3 \times 2\pi + \frac{\pi}{3}$

$-\frac{29\pi}{6} = -\frac{24\pi}{6} - \frac{5\pi}{6}$
$= -2 \times 2\pi - \frac{5\pi}{6}$

$\frac{23\pi}{6} = \frac{24\pi}{6} - \frac{\pi}{6}$
$= 2 \times 2\pi - \frac{\pi}{6}$

$\frac{41\pi}{2} = \frac{40\pi}{2} + \frac{\pi}{2}$
$= 10 \times 2\pi + \frac{\pi}{2}$

$-\frac{101\pi}{4} = -\frac{104\pi}{4} + \frac{3\pi}{4}$
$= -13 \times 2\pi + \frac{3\pi}{4}$

$\frac{59\pi}{3} = \frac{60\pi}{3} - \frac{\pi}{3}$
$= 10 \times 2\pi - \frac{\pi}{3}$

$-\frac{12\pi}{8} = -\frac{3\pi}{2}$
$= -2\pi + \frac{\pi}{2}$

$\frac{57\pi}{12} = \frac{19\pi}{4}$
$= \frac{16\pi}{4} + \frac{5\pi}{4}$
$= 2 \times 2\pi + \frac{5\pi}{4}$

$-\frac{31\pi}{2} = -\frac{32\pi}{2} + \frac{\pi}{2}$
$= -8 \times 2\pi + \frac{\pi}{2}$