

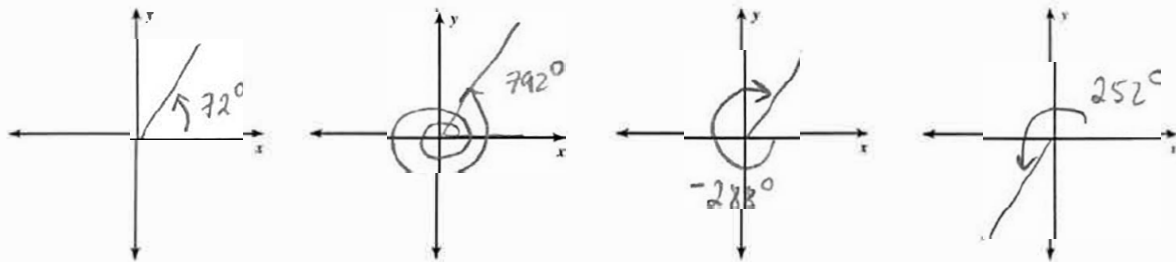
## Activity on Coterminal Angles "Which one is imposter?"

You are given four sets of cards. For each set

- 1) convert all angles to degrees or radians,
- 2) draw all angles in standard position,
- 3) determine coterminal angle between  $0^\circ$  and  $360^\circ$  ( $2\pi$ ),
- 4) find the imposter angle.

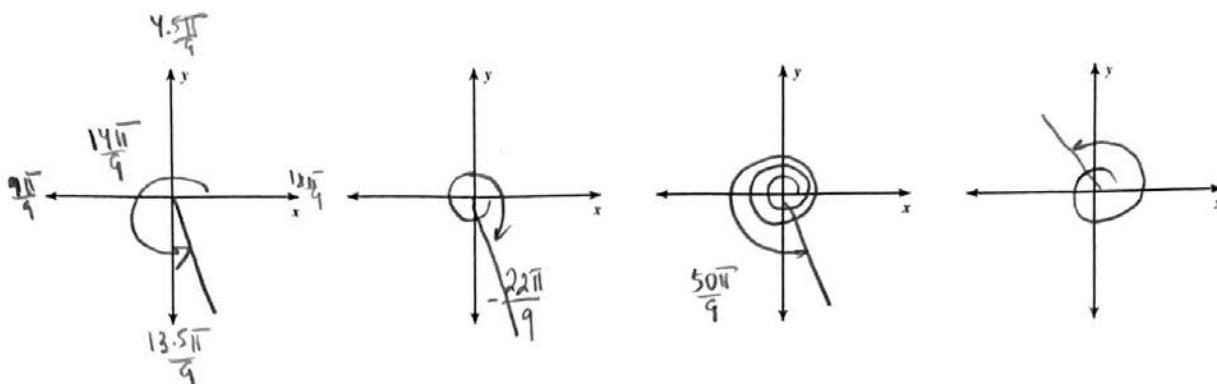
SET I: (page #1)

	GIVEN	IN DEGREES	COTERMINAL ANGLE between 0 and $360^\circ$	Which one is imposter?
ANGLE #1	$72^\circ$	$72^\circ$	$72^\circ$	
ANGLE #2	$\frac{225}{5}$	$\frac{225}{5} \cdot \frac{180}{1} = 792^\circ$	$72^\circ$ ( $792^\circ - 720^\circ$ )	
ANGLE #3	$-288^\circ$	$-288^\circ$	$72^\circ$ ( $-288^\circ + 360^\circ$ )	
ANGLE #4	$\frac{7\pi}{5}$	$\frac{7\pi}{5} \cdot \frac{180}{\pi} = 252^\circ$	$252^\circ$	✓



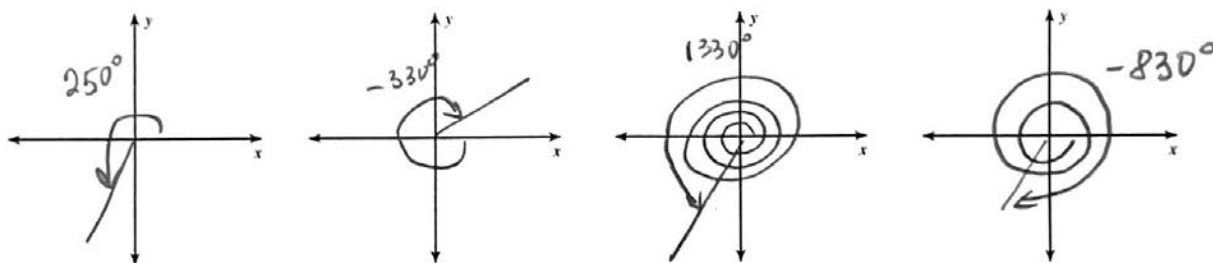
SET II: (page #2)

	GIVEN	IN RADIAN	COTERMINAL between 0 and $2\pi$	Which one is imposter?
ANGLE #1	$280^\circ$	$280^\circ \cdot \frac{\pi}{180} = \frac{14\pi}{9}$	$\frac{14\pi}{9}$	
ANGLE #2	$-\frac{225}{9}$	$-\frac{225}{9}$	$\frac{14\pi}{9}$ ( $-\frac{225}{9} + 4\pi$ )	
ANGLE #3	$1000^\circ$	$1000^\circ \cdot \frac{\pi}{180} = \frac{50\pi}{9}$	$\frac{14\pi}{9}$ ( $\frac{50\pi}{9} - 4\pi$ )	
ANGLE #4	$\frac{23\pi}{9}$	$\frac{23\pi}{9}$	$\frac{5\pi}{9}$ ( $\frac{23\pi}{9} - 2\pi$ )	✓



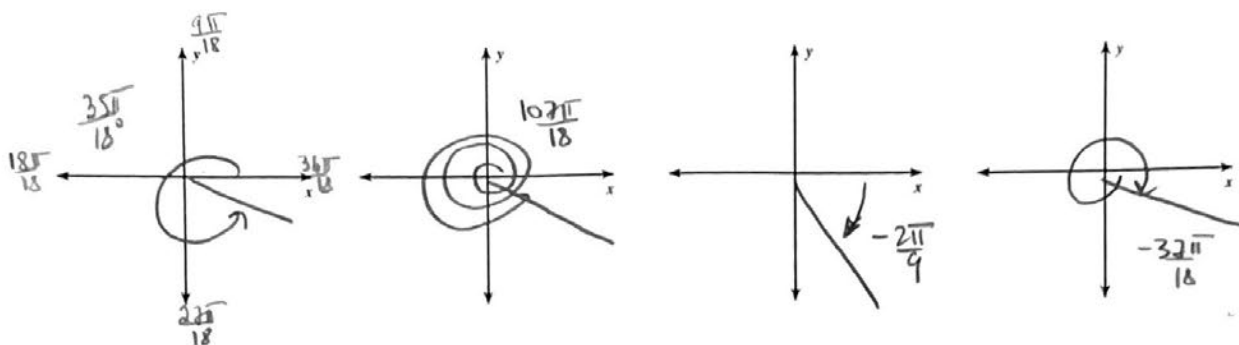
### SET III: (page #3)

	GIVEN	IN DEGREES	COTERMINAL ANGLE between 0 and 360°	Which one is imposter?
ANGLE #1	$\frac{25\pi}{18}$	$\frac{25\pi}{18} \cdot \frac{180}{\pi} = 250^\circ$	$250^\circ$	
ANGLE #2	$-330^\circ$	$-330^\circ$	$30^\circ (-330^\circ + 360^\circ)$	✓
ANGLE #3	$1330^\circ$	$1330^\circ$	$250^\circ (1330^\circ - 3 \times 360^\circ)$	
ANGLE #4	$-\frac{83\pi}{18}$	$-\frac{83\pi}{18} \cdot \frac{180}{\pi} = -830^\circ$	$250^\circ (-830^\circ + 3 \times 360^\circ)$	



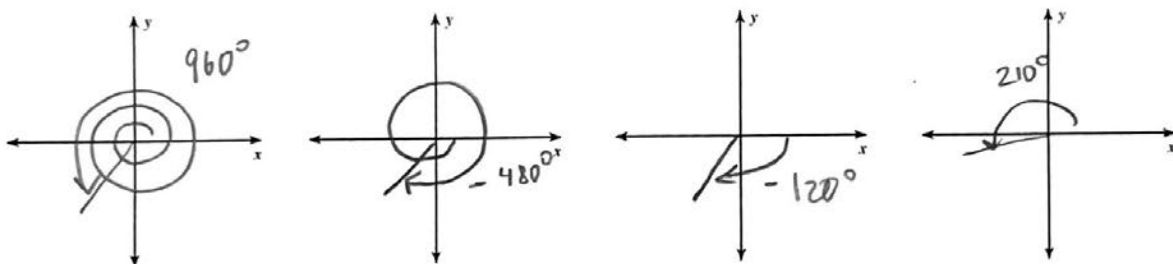
### SET IV: (page #4)

	GIVEN	IN RADIANS	COTERMINAL between 0 and $2\pi$	Which one is imposter?
ANGLE #1	$\frac{35\pi}{18}$	$\frac{35\pi}{18}$	$\frac{35\pi}{18}$	
ANGLE #2	$1020^\circ$	$1020^\circ \cdot \frac{\pi}{180} = \frac{102\pi}{18}$	$\frac{35\pi}{18} (\frac{102\pi}{18} - 4\pi)$	
ANGLE #3	$-\frac{2\pi}{9}$	$-\frac{2\pi}{9}$	$\frac{16\pi}{9} (-\frac{2\pi}{9} + 2\pi)$	✓
ANGLE #4	$-320$	$-320^\circ \cdot \frac{\pi}{180} = -\frac{32\pi}{18}$	$\frac{35\pi}{18} (-\frac{32\pi}{18} + 4\pi)$	



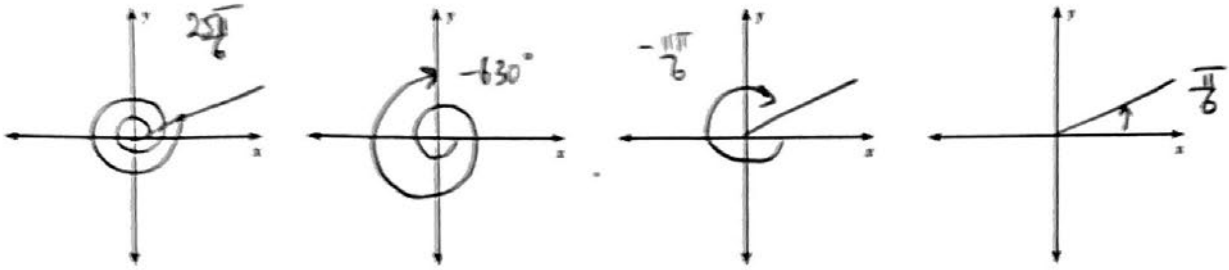
### SET V: (page #5)

	GIVEN	IN <sup>degrees</sup> <del>RADIANS</del>	COTERMINAL between 0 and $2\pi$	Which one is imposter?
ANGLE #1	$\frac{16\pi}{3}$	$\frac{16\pi}{3}, \frac{180^\circ}{\pi} = 960^\circ$	$240^\circ (960^\circ - 2 \times 360^\circ)$	
ANGLE #2	$-480^\circ$	$-480^\circ$	$240^\circ (-480^\circ + 2 \times 360^\circ)$	
ANGLE #3	$-\frac{2\pi}{3}$	$-\frac{2\pi}{3}, \frac{180^\circ}{\pi} = -120^\circ$	$240^\circ (-120^\circ + 360^\circ)$	
ANGLE #4	$210^\circ$	$210^\circ$	$210^\circ$	✓



### SET VI: (page #6)

	GIVEN	IN RADIANS	COTERMINAL between 0 and $2\pi$	Which one is imposter?
ANGLE #1	$\frac{25\pi}{6}$	$\frac{25\pi}{6}$	$\frac{\pi}{6} (\frac{25\pi}{6} - 4\pi)$	
ANGLE #2	$-630^\circ$	$-630^\circ \cdot \frac{\pi}{180} = -\frac{7\pi}{2}$	$\frac{\pi}{2} (-\frac{7\pi}{2} + 4\pi)$	✓
ANGLE #3	$-\frac{11\pi}{6}$	$-\frac{11\pi}{6}$	$\frac{\pi}{6} (-\frac{11\pi}{6} + 2\pi)$	
ANGLE #4	$30^\circ$	$\frac{\pi}{6}$	$\frac{\pi}{6}$	



SET VII: (page #7)

	GIVEN	IN DEGREES	COTERMINAL between 0 and 2π	Which one is imposter?
ANGLE #1	$\frac{25\pi}{6}$	$\frac{25\pi}{6} \cdot \frac{180^\circ}{\pi} = 750^\circ$	$102^\circ (750^\circ - 2 \cdot 250^\circ)$	
ANGLE #2	$-252^\circ$	$-252^\circ$	$108^\circ (-252^\circ + 360^\circ)$	
ANGLE #3	$\frac{2\pi}{5}$	$\frac{2\pi}{5} \cdot \frac{180^\circ}{\pi} = 108^\circ$	$108^\circ$	
ANGLE #4	$144^\circ$	$144^\circ$	$144^\circ$	✓

