IB Mathematics SL

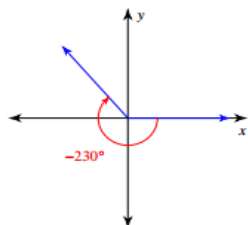Co- terminal and Reference Angles

Name: _____   Date: _____

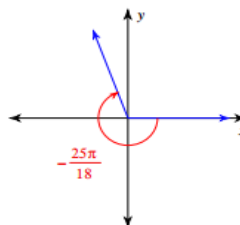*Complete the following questions showing work for all calculations.*
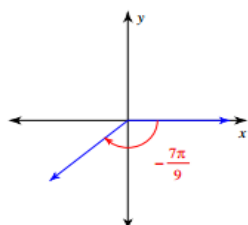
Find the reference angle.

1)

$-230°$

2)

$-\dfrac{25\pi}{18}$

3)

$-\dfrac{7\pi}{9}$

4)

$-\dfrac{29\pi}{18}$

5)

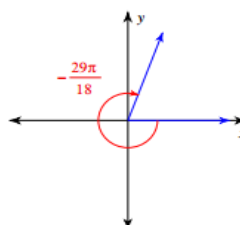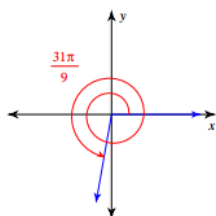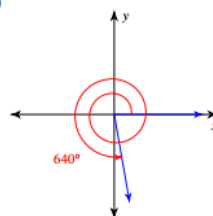$\dfrac{31\pi}{9}$

6)

$640°$

7) $-510°$

8) $-\dfrac{19\pi}{18}$

9) $-\dfrac{13\pi}{12}$

10) $-250°$

State if the given angles are coterminal.

11) $185°$, $-545°$

12) $\dfrac{17\pi}{36}$, $\dfrac{161\pi}{36}$

Find a coterminal angle between 0° and 360°.

13) $-330°$

14) $-435°$

15) $640°$

16) $-442°$

Find a coterminal angle between 0 and 2π for each given angle.

17) $\dfrac{11\pi}{3}$

18) $-\dfrac{35\pi}{18}$

19) $\dfrac{15\pi}{4}$

20) $-\dfrac{19\pi}{12}$

Find a positive and a negative coterminal angle for each given angle.

21) $\dfrac{5\pi}{4}$

22) $\dfrac{25\pi}{36}$