 Name_____

Angles and Angle Measure

Date_____ Period____

Convert each degree measure into radians and each radian measure into degrees.

1) 325°

2) 340°

3) 60°

4) $-\frac{4\pi}{3}$

5) $\frac{23\pi}{12}$

6) $\frac{10\pi}{3}$

7) 570°

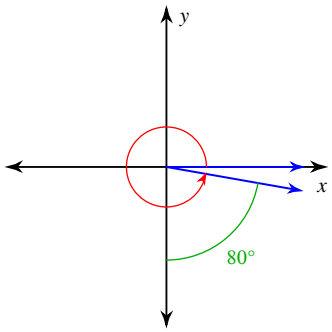
8) −315°

9) $\frac{\pi}{2}$

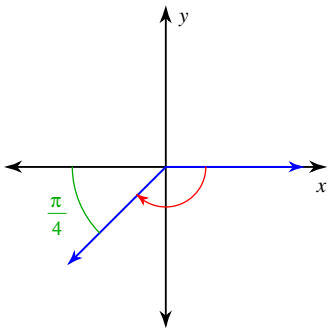
10) −180°

Find the measure of each angle.

11)



12)



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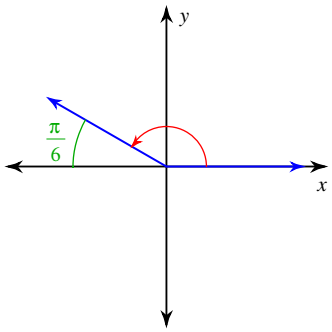

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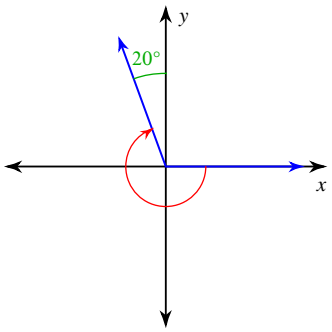

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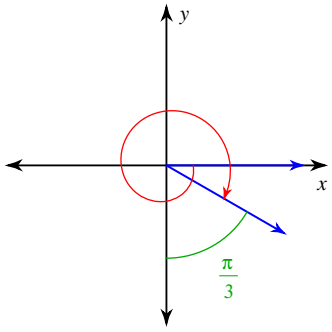
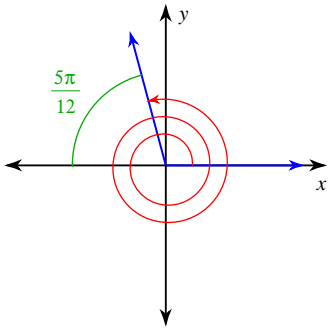
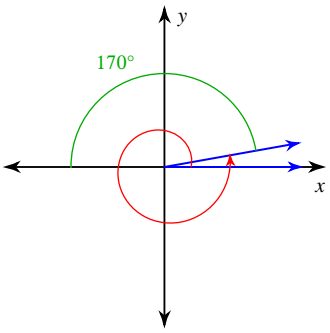


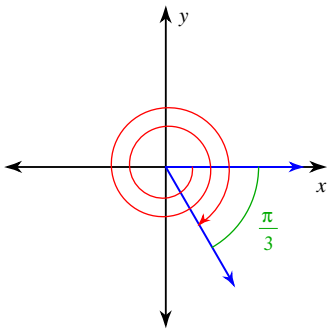
16)



17)

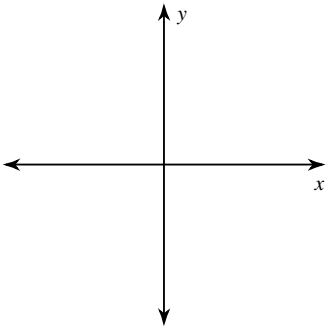


18)

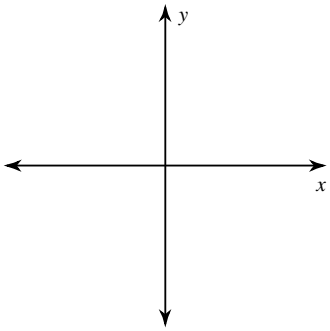


Draw an angle with the given measure in standard position.

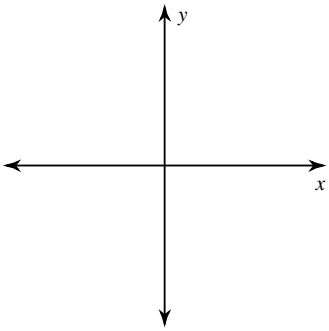
19) 280°



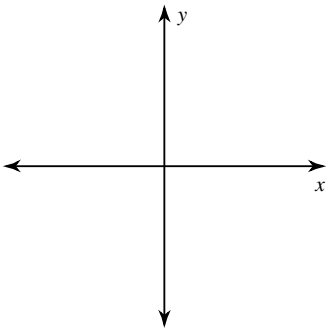
20) 710°



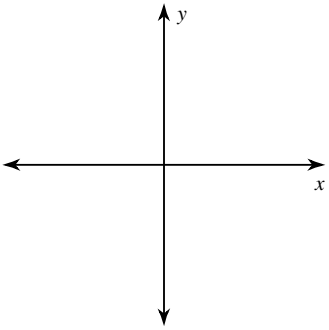
21) −120°



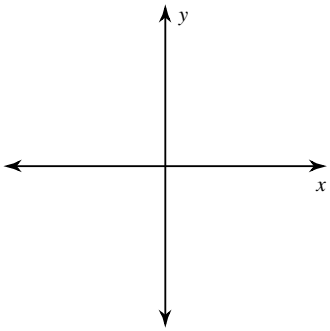
22) $\frac{11\pi}{6}$



23) $-\frac{10\pi}{3}$



24) 440°



State the quadrant in which the terminal side of each angle lies.

25) −509°

26) $-\frac{5\pi}{6}$

27) −340°

28) $\frac{5\pi}{3}$

Kuta Software - Infinite Algebra 2 Name_____

Angles and Angle Measure

Date_____ Period____

Convert each degree measure into radians and each radian measure into degrees.

1) 325° $\frac{65\pi}{36}$

2) 340° $\frac{17\pi}{9}$

3) 60° $\frac{\pi}{3}$

4) $-\frac{4\pi}{3}$ -240°

5) $\frac{23\pi}{12}$ 345°

6) $\frac{10\pi}{3}$ 600°

7) 570° $\frac{19\pi}{6}$

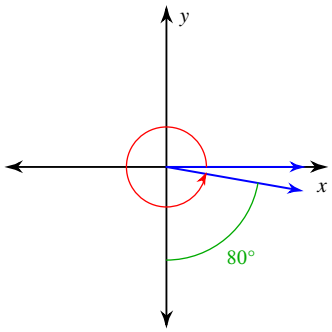
8) −315° $-\frac{7\pi}{4}$

9) $\frac{\pi}{2}$ 90°

10) −180° $-\pi$

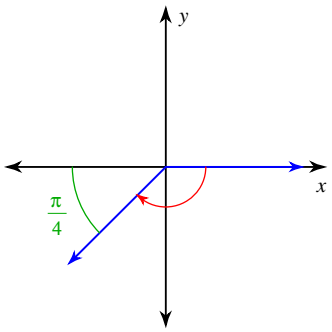
Find the measure of each angle.

11)

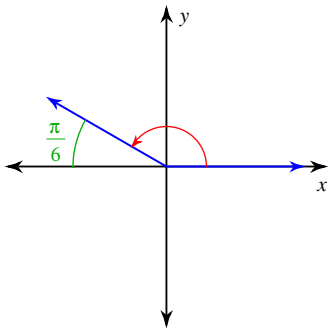


350°

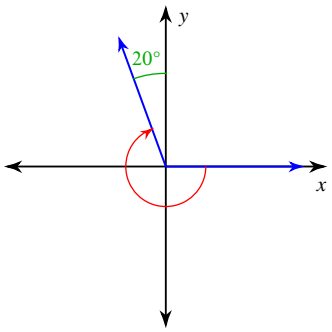
12) $-\frac{3\pi}{4}$



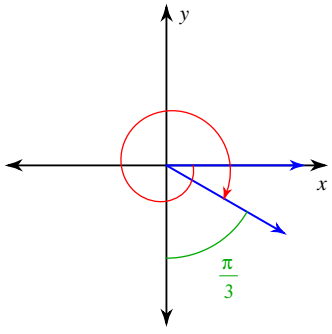
13) $\frac{5\pi}{6}$



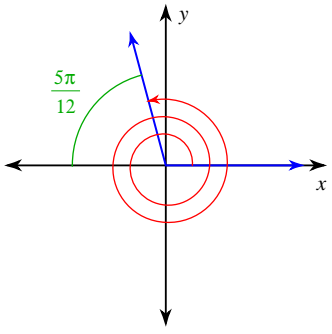
14) −250°



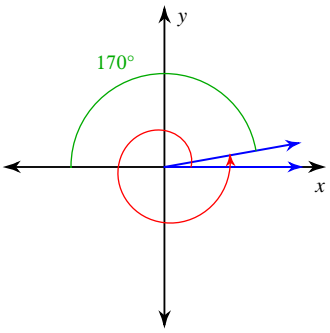
15) $-\frac{13\pi}{6}$



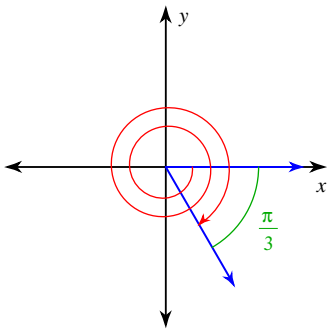
16) $\frac{55\pi}{12}$



17) 370°

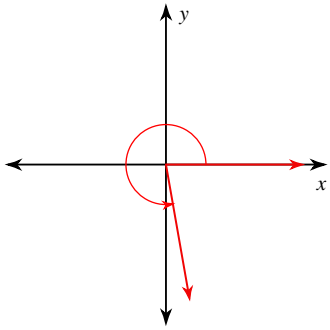


18) $-\frac{13\pi}{3}$

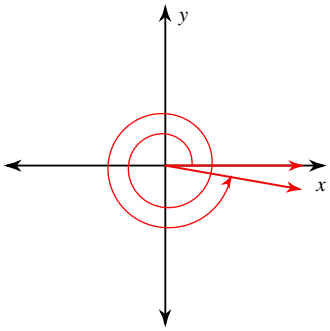


Draw an angle with the given measure in standard position.

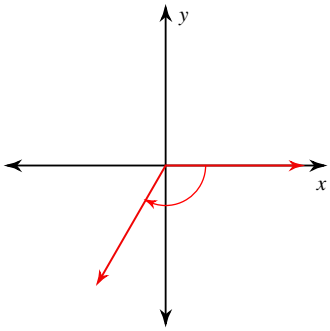
19) 280°



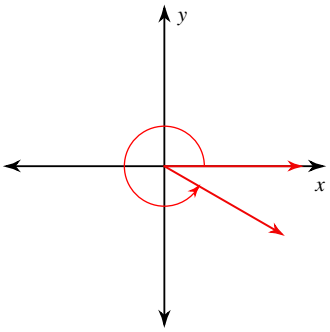
20) 710°



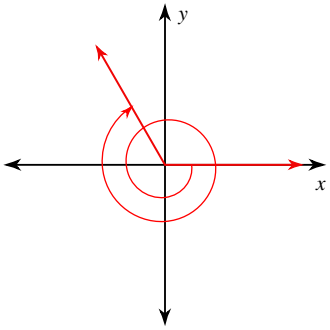
21) −120°



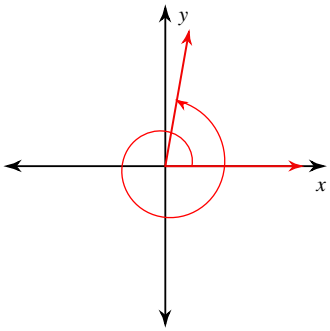
22) $\frac{11\pi}{6}$



23) $-\frac{10\pi}{3}$



24) 440°



State the quadrant in which the terminal side of each angle lies.

25) −509° III

26) $-\frac{5\pi}{6}$ III

27) −340° I

28) $\frac{5\pi}{3}$ IV

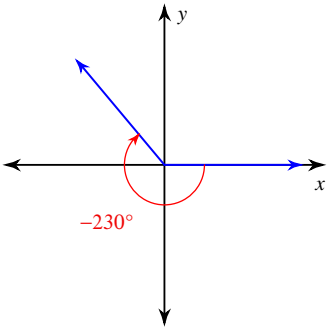
Kuta Software - Infinite Algebra 2 Name_____

Coterminal Angles and Reference Angles

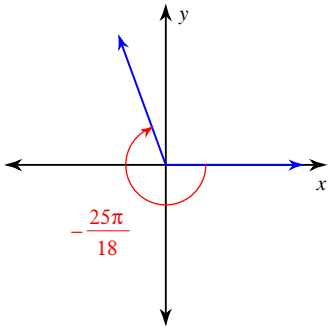
Date_____ Period____

Find the reference angle.

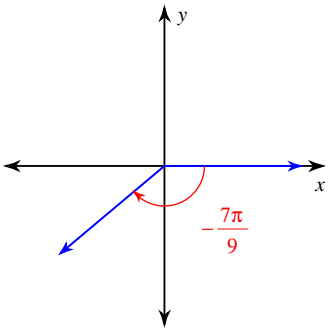
1)



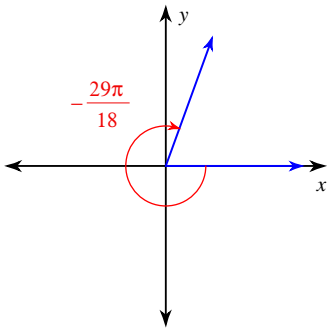
2)



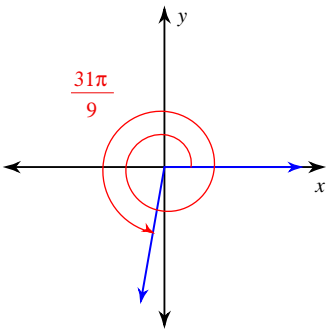
3)



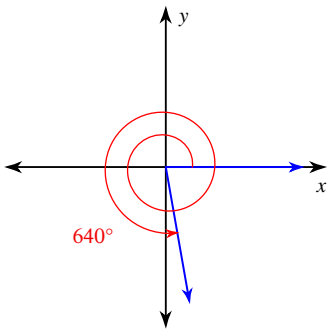
4)



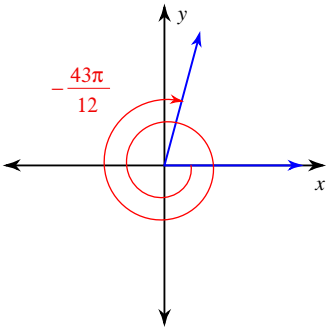
5)



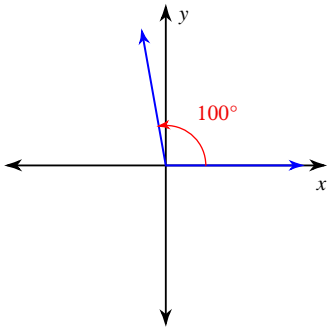
6)



7)



8)



9) −510°

10) $-\frac{19\pi}{18}$

11) $-\frac{13\pi}{12}$

12) −250°

13) $-\frac{5\pi}{6}$

14) $\frac{13\pi}{18}$

State if the given angles are coterminal.

15) $240°,\ 600°$

16) $90°,\ 290°$

17) $185°,\ -545°$

18) $\frac{41\pi}{36},\ \frac{9\pi}{4}$

19) $\frac{17\pi}{36},\ \frac{161\pi}{36}$

20) $\frac{7\pi}{9},\ -\frac{25\pi}{9}$

Find a coterminal angle between 0° and 360°.

21) $-330°$

22) $-435°$

23) $640°$

24) $-442°$

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

25) $\frac{11\pi}{3}$

26) $-\frac{35\pi}{18}$

27) $\frac{15\pi}{4}$

28) $-\frac{19\pi}{12}$

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

29) $\frac{5\pi}{4}$

30) $\frac{25\pi}{36}$

31) $-\frac{7\pi}{6}$

32) $\frac{29\pi}{45}$

33) $\frac{7\pi}{9}$

34) $\frac{3\pi}{4}$

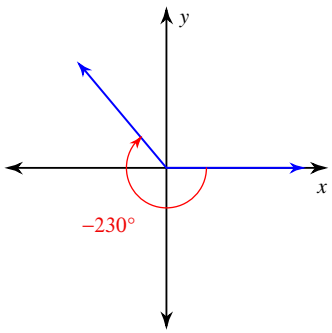
Kuta Software - Infinite Algebra 2 Name_____

Coterminal Angles and Reference Angles

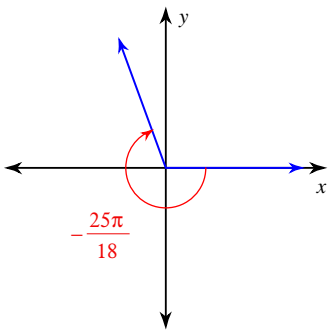
Date_____ Period____

Find the reference angle.

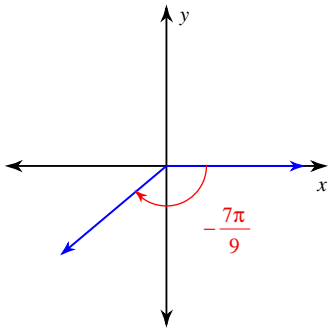
1) 50°



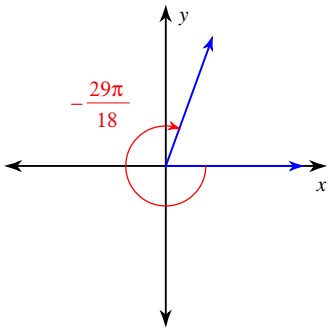
2) $\frac{7\pi}{18}$



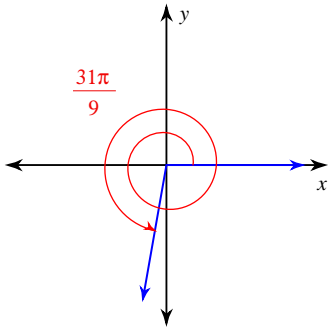
3) $\frac{2\pi}{9}$



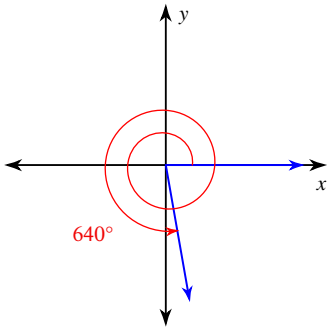
4) $\frac{7\pi}{18}$



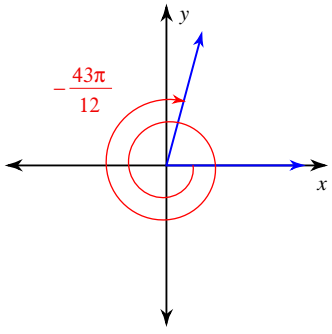
5) $\frac{4\pi}{9}$



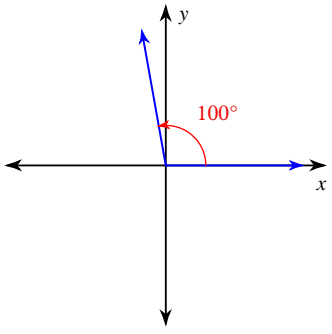
6) 80°



7) $\frac{5\pi}{12}$



8) 80°



9) −510° 30°

10) $-\frac{19\pi}{18}$ $\frac{\pi}{18}$

11) $-\frac{13\pi}{12}$ $\frac{\pi}{12}$

12) −250° 70°

13) $-\frac{5\pi}{6}$ $\frac{\pi}{6}$

14) $\frac{13\pi}{18}$ $\frac{5\pi}{18}$

State if the given angles are coterminal.

15) $240°,\ 600°$

Yes

16) $90°,\ 290°$

No

17) $185°,\ -545°$

No

18) $\frac{41\pi}{36},\ \frac{9\pi}{4}$

No

19) $\frac{17\pi}{36},\ \frac{161\pi}{36}$

Yes

20) $\frac{7\pi}{9},\ -\frac{25\pi}{9}$

No

Find a coterminal angle between 0° and 360°.

21) $-330°$

30°

22) $-435°$

285°

23) $640°$

280°

24) $-442°$

278°

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

25) $\frac{11\pi}{3}$ $\frac{5\pi}{3}$

26) $-\frac{35\pi}{18}$ $\frac{\pi}{18}$

27) $\frac{15\pi}{4}$ $\frac{7\pi}{4}$

28) $-\frac{19\pi}{12}$ $\frac{5\pi}{12}$

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

29) $\frac{5\pi}{4}$

$\frac{13\pi}{4}$ and $-\frac{3\pi}{4}$

30) $\frac{25\pi}{36}$ $\frac{97\pi}{36}$ and $-\frac{47\pi}{36}$

31) $-\frac{7\pi}{6}$

$\frac{5\pi}{6}$ and $-\frac{19\pi}{6}$

32) $\frac{29\pi}{45}$ $\frac{119\pi}{45}$ and $-\frac{61\pi}{45}$

33) $\frac{7\pi}{9}$

$\frac{25\pi}{9}$ and $-\frac{11\pi}{9}$

34) $\frac{3\pi}{4}$ $\frac{11\pi}{4}$ and $-\frac{5\pi}{4}$