

# Algebra IIb 12-3 Day 1 Solutions

## Oral Exercises

State the measure of the reference angle  $\alpha$  for each angle  $\theta$ .

1.  $45^\circ$

2.  $60^\circ$

3.  $30^\circ$

4.  $45^\circ$

14.  $\sin \theta = -\frac{4}{5}, \cos \theta = \frac{3}{5},$   
 $\tan \theta = -\frac{4}{3}, \csc \theta = -\frac{5}{4},$   
 $\sec \theta = \frac{5}{3}, \cot \theta = -\frac{3}{4}$

16.  $\sin \theta = -\frac{\sqrt{2}}{2}, \cos \theta = -\frac{1}{\sqrt{2}},$   
 $\tan \theta = 1, \csc \theta = -\sqrt{2},$   
 $\sec \theta = -\sqrt{2}, \cot \theta = 1$

17.  $\sin \theta = 1, \cos \theta = 0, \tan \theta$   
 is undefined,  $\csc \theta = 1,$   
 $\sec \theta$  is undefined,  
 $\cot \theta = 0.$

18.  $\sin \theta = 0, \cos \theta = 1,$   
 $\tan \theta = 0, \csc \theta$  is unde-  
 fined,  $\sec \theta = 1, \cot \theta$  is  
 undefined.

20.  $\sin \theta = \frac{\sqrt{5}}{5}, \cos \theta = -\frac{2\sqrt{5}}{5},$   
 $\tan \theta = -\frac{1}{2},$   
 $\csc \theta = \sqrt{5}, \sec \theta = -\frac{\sqrt{5}}{2},$   
 $\cot \theta = -2$

In Exercises 21–28, name the quadrant of  $\theta$ . (Use the chart on page 562.)

21.  $\sin \theta < 0, \cos \theta > 0$  IV

23.  $\sin \theta > 0, \cos \theta > 0$  I

25.  $\sec \theta > 0, \tan \theta < 0$  IV

27.  $\cos \theta < 0, 180^\circ < \theta < 360^\circ$  III

29. If  $\cos \theta = \frac{1}{4}, \sec \theta = \underline{4}$

31. If  $\cot \theta = -3, \tan \theta = \underline{-\frac{1}{3}}$

22.  $\sin \theta < 0, \cos \theta < 0$  III

24.  $\sin \theta > 0, \cos \theta < 0$  II

26.  $\csc \theta < 0, \cos \theta < 0$  III

28.  $\tan \theta > 0, 90^\circ < \theta < 270^\circ$  III

30. If  $\sin \theta = -\frac{3}{5}, \csc \theta = \underline{-\frac{5}{3}}$

32. If  $\sec \theta = 1.5, \cos \theta = \underline{\frac{2}{3}}$