Name:

Angle and their Measures

**In Exercises 1-4, express each angle in exact radian measure.**

1. (a) 30˚ (b) 150˚
2. (a) 315˚ (b) 120˚
3. (a) -20˚ (b) -240˚
4. (a) -270˚ (b) 144˚

**In Exercises 5-8, express each angle in degree measure.**

1. (a)  (b) 
2. (a)  (b) 
3. (a)  (b) 
4. (a)  (b) 

**In Exercises 9-12, determine two coterminal angles (one positive and one negative) for each angle.**

1. (a) θ=45˚ (b) θ=-36˚
2. (a) θ=120˚ (b) θ=-420˚
3. (a) θ=300˚ (b) θ=740˚
4. (a) θ=-520˚ (b) θ=230˚

**In Exercises 13-16, determine two coterminal angles (one positive and one negative) for each angle. Give answer in radians.**

1. (a)  (b) 
2. (a)  (b) 
3. (a)  (b) 
4. (a)  (b) 

**In Exercises 17-20, determine the quadrant in which angle lies.**

1. (a) 130˚ (b) 285˚
2. (a) 8.3˚ (b) 257˚30’
3. (a) -132˚50’ (b) -336˚
4. (a) -260˚ (b) -3.4˚

**In Exercises 21-24, sketch each angle in standard position.**

1. (a) 30˚ (b) 150˚
2. (a) -270˚ (b) -120˚
3. (a) 405˚ (b) 480˚
4. (a) -750˚ (b) -600˚

**In Exercises 25-28, determine the quadrant in which angle lies.**

1. (a)  (b)
2. (a)  (b) 
3. (a)  (b) 
4. (a) -1 (b) -2

**In Exercises 29-32, sketch each angle in standard position.**

1. (a)  (b) 
2. (a) (b) 
3. (a)  (b) 7π
4. (a) 4 (b) -3

**In Exercises 33-40, find the reference angle.**

1. (a) 35o (b) 165o
2. (a) 197o (b) 335o
3. (a) -83o (b) -135o
4. (a) 574o (b) 1260o
5. (a)  (b) 
6. (a)  (b) 
7. (a)  (b) 
8. (a)  (b) 
9. Sofia is spinning a wheel on a game show. There are 20 values in equal-sized spaces around the circumference of the wheel. The value that Sofia needs to win is two spaces above the space where she starts her spin, and the wheel must make at least one full rotation for the spin to count. Describe a spin rotation in degrees that will give Sofia a winning result.

