This part consists of 8 multiple choice problems. Nothing more than the answer is required; consequently no partial credit will be awarded.

1. Express $36^\circ$ in radians.
   
   A $\frac{\pi}{4}$  
   B $\frac{\pi}{5}$  
   C $\frac{\pi}{6}$  
   D $\frac{\pi}{7}$  
   E $\frac{\pi}{8}$

2. Express $\frac{\pi}{540}$ rad in degrees.
   
   A $0.1^\circ$  
   B $0.2^\circ$  
   C $0.3^\circ$  
   D $0.4^\circ$  
   E $0.5^\circ$
3. Find an angle that is coterminal with the angle $\theta = -719^\circ$ in standard position.

A  $-3^\circ$

B  $-2^\circ$

C  $-1^\circ$

D  $1^\circ$

E  $2^\circ$

4. Find an angle that is coterminal with the angle $\theta = -\frac{19\pi}{5}$ in standard position.

A  $\frac{\pi}{5}$

B  $-\frac{\pi}{5}$

C  $\frac{2\pi}{5}$

D  $-\frac{2\pi}{5}$

E  $\frac{3\pi}{5}$

F  $-\frac{3\pi}{5}$

5. Find an angle with measure between $0^\circ$ and $360^\circ$ that is coterminal with the angle of measure $-997^\circ$ in standard position.

A  $53^\circ$

B  $63^\circ$

C  $73^\circ$

D  $83^\circ$

E  $93^\circ$
6. Find the length of an arc of a circle with radius 10 m that subtends a central angle of 135°.

A) $\frac{15\pi}{2}$  
B) $15\pi$  
C) $\frac{7\pi}{2}$  
D) $7\pi$  
E) $\frac{5\pi}{2}$

7. A central angle $\theta$ in a circle of radius $\sqrt{5}$ m is subtended by an arc of length $\sqrt{20}$ m. Find the measure of $\theta$ in radians.

A) $\frac{1}{2}$  
B) $2$  
C) $\frac{1}{4}$  
D) $4$  
E) None of the above

8. Find the area of a sector of a circle with central angle 210° if the radius of the circle is $\sqrt{2}$ m.

A) $\frac{\pi}{6}$  
B) $\frac{5\pi}{6}$  
C) $\frac{7\pi}{6}$  
D) $\frac{11\pi}{6}$  
E) $\frac{\pi}{3}$
In the following problems you are required to show all your work and provide the necessary explanations everywhere to get full credit.

1. A DVD is approximately 12 centimeters in diameter. The drive motor of the DVD player is controlled to rotate precisely between 200 and 500 revolutions per minute, depending on what track is being read.

(a) Find intervals for the angular and linear speed of a disc as it rotates.

(b) Find the linear speed of a point on the outermost track as the disc rotates.

2. In traveling across flat land you notice a mountain directly in front of you. Its angle of elevation (to the peak) is 3.5°. After you drive 13 miles closer to the mountain, the angle of elevation is 9° (see the figure below). Approximate the height of the mountain.