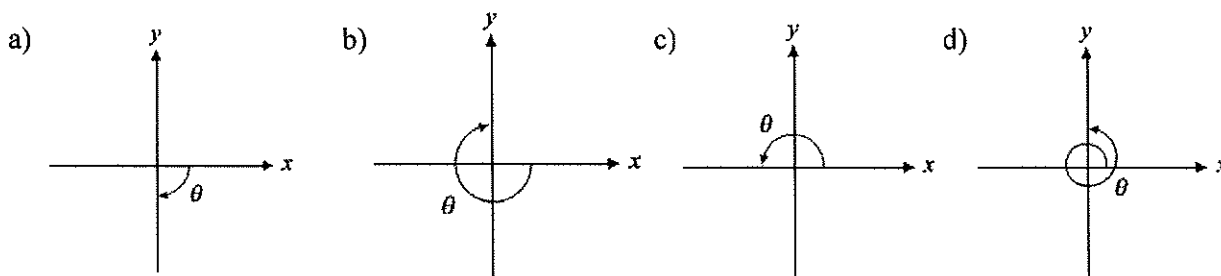


**Angles in Standard Position**

1. An angle in standard position is shown. What is the value of  $\theta$ ?



2. Draw each angle in standard position and find its reference angle.

- |                          |                          |                         |                         |
|--------------------------|--------------------------|-------------------------|-------------------------|
| a) $\theta = 250^\circ$  | b) $\theta = 120^\circ$  | c) $\theta = 50^\circ$  | d) $\theta = 325^\circ$ |
| e) $\theta = -330^\circ$ | f) $\theta = -260^\circ$ | g) $\theta = -45^\circ$ | h) $\theta = 270^\circ$ |

3. If P is a point on the terminal arm of an angle  $\theta$  in standard position. Suppose P has rotated  $420^\circ$ .

- How many complete rotations have been made?
- In which Quadrant is P located now?
- Draw a diagram to show the position of P on the terminal arm.

4. Repeat Question 3 if P has rotated:

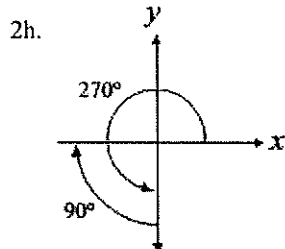
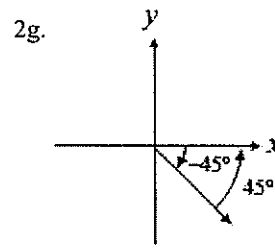
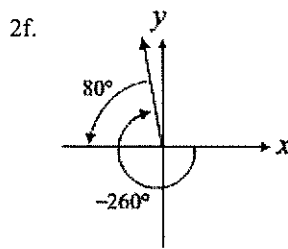
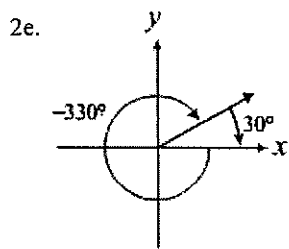
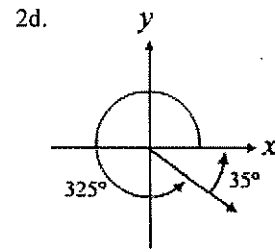
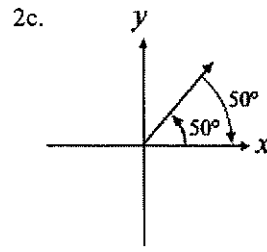
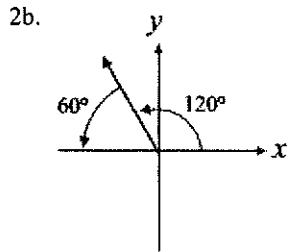
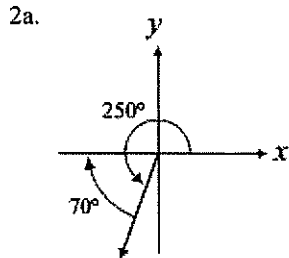
- |                         |                         |                          |                         |
|-------------------------|-------------------------|--------------------------|-------------------------|
| a) $\theta = 870^\circ$ | b) $\theta = 480^\circ$ | c) $\theta = 1000^\circ$ | d) $\theta = 660^\circ$ |
|-------------------------|-------------------------|--------------------------|-------------------------|

5. Draw each angle in standard position and find its reference angle.

- |                         |                         |                           |                          |
|-------------------------|-------------------------|---------------------------|--------------------------|
| a) $\theta = 600^\circ$ | b) $\theta = 810^\circ$ | c) $\theta = -1260^\circ$ | d) $\theta = -225^\circ$ |
|-------------------------|-------------------------|---------------------------|--------------------------|

ANSWERS FOR LESSON 1

1a.  $\theta = -90^\circ$  1b.  $\theta = -270^\circ$  1c.  $\theta = 180^\circ$  1d.  $\theta = 45^\circ$

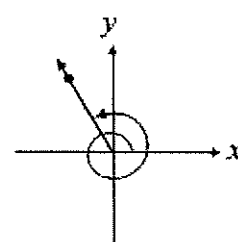
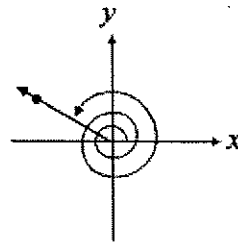
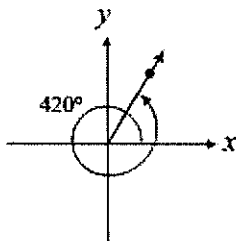


3a. 1 complete rotation

3b. QI

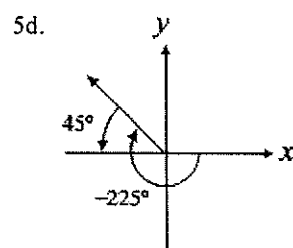
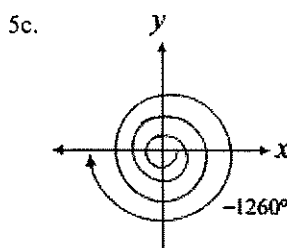
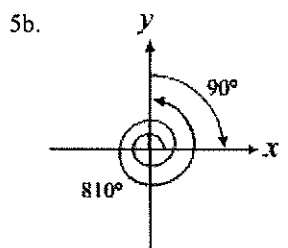
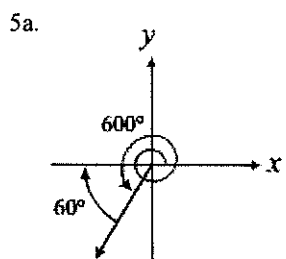
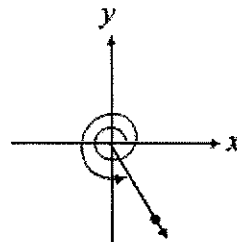
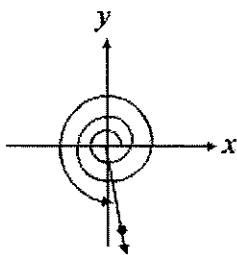
4a. 2 complete rotations; QII

4b. 1 complete rotation; QII



4c. 2 complete rotations; QIV

4d. 1 complete rotation; QIV



reference angle =  $0^\circ$