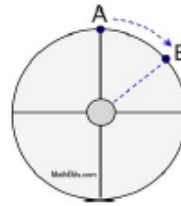
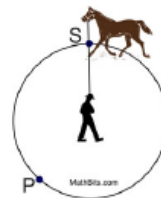


Do your work on separate paper if you need more space.

1. A child pushes a playground merry-go-round so handle A moves to position B . The radius of the merry-go-round is 5 feet and the distance traveled by the handle along the arc from A to B is 4.5 feet. Find to the nearest degree, the measure of minor arc \widehat{AB} .



2. A horse on a lunge line travels in a circle around its trainer. The radius of the horse's circle is 24 feet. If the angle between location S and P on the circle is 140° (counterclockwise), find the length the horse travels from S to P in feet, to the nearest foot.



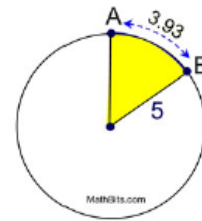
3. A sprinkler head is equidistant from flower garden A and a small shrub B . The sprinkler waters in a circular pattern. If the length of minor arc \widehat{AB} is 12 feet and the radius of the circle is 10 feet, find the measure of the central angle subtended by minor arc \widehat{AB} , to the nearest degree.



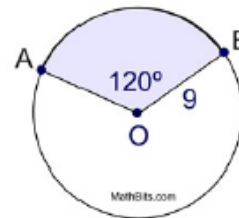
4. What is the radian measure of an angle containing 60° ?

5. Convert 72° to radians.

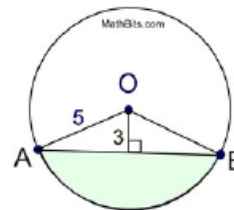
6. Find the area of the sector shown at the right. The radius of the circle is 5 units and the length of the minor arc from A to B is 3.93 units. Express the answer to the *nearest tenth* of a square unit.



7. Find the area of the sector shown at the right. The radius of the circle is 9 cm. and the central angle of the sector is 120° . Express the answer to the *nearest tenth* of a square centimeter.



8. Find the area of the segment shown at the right. The radius of the circle is 5 in., the altitude of $\triangle AOB$ is 3 in., and $m\angle AOB$ is 106 degrees. Express the answer to the *nearest tenth* of a square inch.



Extra Credit (do on separate paper and hand in):

- Find the area of the segment shown at the right. The radius of the circle is 8 ft., and the central angle of the sector is 60° . Express the answer to the *nearest tenth* of a square foot.

