

Math 06, Homework 10 on the circle
due Tue, April 23 at the start of class.

These first ten questions from the Trigonometry Supplement are 2 points each. Write your work on a separate sheet. Show clearly all your working out and reasoning and check your answers match the ones in the book at the end of each section.

1. **Q1, p. 137.** In a circle of radius 10 cm find the arc length determined by a central angle $\theta = 90^\circ$, correct to two decimal places.
 2. **Q11, p. 137.** In a circle of radius 10 ft find the central angle corresponding to an arc length $s = 30$ ft, correct to two decimal places.
 3. **Q21, p. 137.** Find the circumference of a circle where a central angle of 7.2° determines an arc length of 439 miles.
 4. **Q23, p. 137.** Express 60° as an exact number of radians.
 5. **Q37, p. 137.** Express -225° as an exact number of radians.
 6. **Q49, p. 138.** Express $4\pi/3$ radians as an exact number of degrees.
 7. **Q61, p. 138.** In a circle of radius 25 cm find the arc length determined by a central angle $\theta = 3$, correct to two decimal places.
 8. **Q71, p. 138.** In a circle of radius 2 ft find the area of the sector determined by a central angle $\theta = 50^\circ$, correct to two decimal places.
 9. **Q75, p. 138.** In a circle of radius 400 ft find the area of the sector determined by a central angle $\theta = 1.6$, correct to two decimal places.
 10. **Q7, p. 157.** Give the coordinates of the point $P(x, y)$ on the unit circle corresponding to 330° .
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These next five questions are 2 points each. It is very important that you show clearly any work you had to do to get the answer and explain your reasoning.

11. Find the circumference of a circle of radius 9 inches, correct to two decimal places.
12. In a circle of radius 60 cm find the arc length determined by a central angle $\theta = 20^\circ$, correct to two decimal places.
13. In a circle of radius 60 cm find the arc length determined by a central angle $\theta = 2$, correct to two decimal places.

14. In a circle of radius 60 cm find the area of the sector determined by a central angle $\theta = 2$, correct to two decimal places.
15. Give the coordinates of the point $P(x, y)$ on the unit circle corresponding to an angle of $3\pi/2$.