
Math B Week 2 Homework
Due Monday 13 February 2006
Mr. Quinn

Part I: Convert these radian measures to degrees. Where possible, do not approximate.

1. $\pi/4$
2. $2\pi/3$
3. $3\pi/2$
4. $5\pi/6$
5. $7\pi/12$
6. $7\pi/3$
7. 1 radian
8. 2 radians
9. 3 radians
10. $\frac{1}{2}$ radian
11. -1 radian
12. .1 radian

Part II: Convert these degree measures to radians. Where possible, do not approximate.

1. 30 degrees
2. 45 degrees
3. 225 degrees
4. 315 degrees
5. 75 degrees
6. 255 degrees
7. 15 degrees
8. 20 degrees
9. 40 degrees
10. 88 degrees
11. -77 degrees
12. 444 degrees

Part III: Determine the values measures of these angles in radians and also in degrees given the radius of the circle and length of the included arc given.

1. radius = 4, arclength = 2
2. radius = 10, arclength = 15
3. radius = 1, arclength = $\frac{1}{2}$
4. radius = 100, arclength = 312
5. radius = $\frac{1}{2}$, arclength = 1.5
6. radius = 33, arclength = 6

Part IV: Solve for sine and cosine of $2x$ if the values of sine and/or cosine are as given here. Remember that you can only find $\sin 2x$ if you have both sine and cosine, so you may need to solve for one of these.

1. $\sin x = 0.777$, $\cos x = 0.629$
2. $\sin x = 0.341$, $\cos x = .940$
3. $\cos x = 0.819$
4. $\cos x = 0.414$
5. $\sin x = 0.212$
6. $\cos x = -0.423$
7. $\sin x = 0.101$
8. $\sin x = -0.522$
9. $\sin x = 0.644$

Part V: Radian Regents Questions

23 An art student wants to make a string collage by connecting six equally spaced points on the circumference of a circle to its center with string. What would be the radian measure of the angle between two adjacent pieces of string, in simplest form?

21 Kristine is riding in car 4 of the Ferris wheel represented in the accompanying diagram. The Ferris wheel is rotating in the direction indicated by the arrows. The eight cars are equally spaced around the circular wheel. Express, in radians, the measure of the *smallest* angle through which she will travel to reach the bottom of the Ferris wheel.

