Complete the following questions utilizing the concepts introduced in this unit.

1.  Find the length of an arc in a circle of radius 10 centimeters subtended by the central angle of 50°. Show your work.

2.  Graph [ f(x)=x\ sin\ x ](https://my.uopeople.edu/filter/tex/displaytex.php?texexp=%20f%28x%29%3Dx%5C%20sin%5C%20x%20) on [-4π, 4π] and verbalize how the graph varies from the graphs of [ f(x)= \pm x  ](https://my.uopeople.edu/filter/tex/displaytex.php?texexp=%20f%28x%29%3D%20%5Cpm%20x%20%20).

Graph [ f(x)= \frac{sin\ x}{x}  ](https://my.uopeople.edu/filter/tex/displaytex.php?texexp=%20f%28x%29%3D%20%5Cfrac%7Bsin%5C%20x%7D%7Bx%7D%20%20)  on the window [−5π, 5π] and describe freely what the graph shows. You can use [www.desmos.com/calculator](http://www.desmos.com/calculator) to obtain the graphs.

3. A 23-ft ladder leans against a building so that the angle between the ground and the ladder is 80°. How high does the ladder reach up the side of the building? Show the steps of your reasoning.