6. [10 points] A diagram showing a Ferris wheel is below. The radius of the Ferris wheel is 20 meters, and the lowest point (where people board) is reached by a small set of stairs and is 5 meters above ground level. We'll consider the following question about this scenario:

When an arm of the Ferris wheel is making an angle of $130^\circ$ with horizontal, how high is that rider off the ground?

![Diagram of Ferris wheel with rider](image)

a. [3 points] Ayisha really likes to do trig problems using a unit circle perspective. She comes up with a correct answer that involves $\sin(130^\circ)$ in her answer. What is Ayisha’s answer? 

Give your answer in exact form.

____________________ meters

b. [2 points] Oh no! Ayisha accidentally had her calculator in radians when she computed her answer. What would she get in that case? How could she recognize right away that her answer was incorrect?

c. [4 points] Bruno really likes to do trig problems using right triangles. He comes up with a correct answer that involves $\cos(40^\circ)$. Draw the right triangle Bruno could have been considering and use that triangle to find Bruno’s correct expression for the rider’s height from the ground. 

Give your answer in exact form.

____________________ meters.

d. [1 point] Using a calculator, verify that Ayisha’s and Bruno’s answers agree. That is, find the numerical value of both expressions. 

(We’re now assuming that Ayisha’s calculator is correctly back in degrees!)