**Commentary:**

This task asks students to find the difference between the volumes of two cylinders. Furthermore, they will have to calculate a given cost based on the difference.

Students will be able to complete this task given that they know the formula for the volume of a cylinder (HSG.GMD.A.3). In addition to using basic algebra, they will be able to understand the relationship between cost and volume.

**Solution:**  
We have r = 0.5ft., R=2ft., and h = 6ft.  
Now, the volume of a cylinder is ()(r2 )(h).  
In this instance, the student is required to subtract the volume of a smaller cylinder from a larger cylinder. Therefore, we use the formula V = ()( R2)(h) – ()(r2)(h) where V is the volume.  
V= (22)(6) – (0.52)(6)  
V= (4)(6) – (0.25)(6)  
V= (24) – (1.5)  
V= (22.5)

V= 70.69 ft3  
Now we can find the cost of the wheel, given that its volume is 70.69 ft3 and the cost per cubic foot of steel is $2.40.

Cost = V x $2.40 per ft3  
Cost= 70.69ft3 x $2.40 per ft3

Cost= $169.66