

# Coach 84 Quiz

## *Exploring Math, Physics and Architectural Concepts*

1. What is the wheel diameter of the front wheels? \_\_\_\_\_  
Rear wheels? \_\_\_\_\_
2. Count the total wheel spokes front and back \_\_\_\_\_
3. As they rotate, which wheels (front or rear) make more revolutions? \_\_\_\_\_  
Why? \_\_\_\_\_
4. If 2 people can sit at the drivers/shotgun position and another 6 people can sit on top, how many total people can ride on and in the coach? \_\_\_\_\_
5. Which will provide the smoothest ride: a large wheel or a small wheel? \_\_\_\_\_  
Why? \_\_\_\_\_
6. When the driver pushes the brake foot handle (that then pushes the brake against the rear wheels), what is the force called that causes the wheel to turn slower? \_\_\_\_\_  
(Demonstrate this force by pressing your hands and sliding them against each other.)
7. For what purposes do the side curtains serve?
  - Reduces dust inside the coach
  - Prevents sunlight from shining in
  - Protects against rain and snow
  - All of the above
8. What shape of the Coach undercarriage allows the Coach to rock front and back (like a cradle, according to Mark Twain)? \_\_\_\_\_
9. There is a black, gooey material (grease) that is put around the wheel hub and axle. What is the purpose of this material? \_\_\_\_\_
10. As you look at the coach from the back or the front, what allows the coach to ride over a slanted surface without tipping over? \_\_\_\_\_
11. What is the purpose of having straps with buckles holding the rear boot cover?  
\_\_\_\_\_
12. As you look at the coach from the side, which wheels front or back support the greatest weight? \_\_\_\_\_ Why? \_\_\_\_\_
13. As you visualize 9 passengers riding inside the coach for many days and nights, what common sense rules do you think would be needed for the relative comfort of all passengers?  
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