

Name \_\_\_\_\_

# MYTHBUSTERS



## Video Guide for

# *MythBusters: Tanker Crush*

### Tanker Crush

1. What sucks but does not suck? \_\_\_\_\_
2. What does the cooling rain cause the steam to do? \_\_\_\_\_
3. What is pressure differential? \_\_\_\_\_

4. Where will the pressure be greater, on the outside or inside of the can?  
\_\_\_\_\_

5. Why are they putting a vacuum pressure gauge inside the 55-gallon drum? \_\_\_\_\_

6. What is the only difference between screwing around and science? \_\_\_\_\_

7. When they used steam, it created a \_\_\_\_\_ pressure differential and the drum took more of a beating.

8. What 2 things are critical when it comes to building pressure vessels?

1. \_\_\_\_\_
2. \_\_\_\_\_

9. What does Adam hear? \_\_\_\_\_

10. What does the data suggest about the myth? \_\_\_\_\_

11. What are the 2 crucial parameters they are measuring?

1. \_\_\_\_\_
2. \_\_\_\_\_

(over)

12. What is the temperature when Adam closes the valve? \_\_\_\_\_

13. What happens when the steam begins to condense? \_\_\_\_\_

14. Jamie says, "Remember folks, science can be \_\_\_\_\_."

15. What is the difference between the 1<sup>st</sup> and 2<sup>nd</sup> tanker car? \_\_\_\_\_

16. How much negative pressure did they max out at? \_\_\_\_\_

17. After some modifications to the train car, were they able to get an implosion? \_\_\_\_\_

**Extend and apply...**

18. (Circle one) The gas law that most applies to this episode is (*Charles, Boyle, or Guy-Lussac*).

19. Look up the gas law online and write the equation for it below.

20. (Circle one) For this gas law, (*pressure, temperature, or volume*) must remain constant.

21. If that variable does not remain constant, what will eventually happen to the object under pressure?

22. Besides crushing tanker cars for a TV show, describe a real-life job where the application of this gas law must be successfully used. (Think in terms of human safety)

**Fun Fact:** If you have flown on a plane, you may have felt a popping in your ears as the plane took off or when it landed. This is due to an increase or decrease in air pressure. Your body is trying to readjust to the changes in air pressure as you change altitude. It can be a painful experience for some. Babies and very young children usually tend to not like it at all! But to help relieve the pressure differential, you can try chewing some gum, yawning, or swallowing. These actions will help relax your Eustachian tube, allowing air pressure to equalize. One thing I do is to pinch my nose, hold some air in my mouth, then compress my mouth. Works every time!