

QUESTIONS - Drivetrain

First & Last NAME:

Theory

Using the information in i:\wellwood\mechanics\drivetrain.html, the internet and other sources to answer the questions below.

There are NO Partial Marks - when it says "describe" – DESCRIBE

1. What are the two purposes of the Drivetrain?

a.

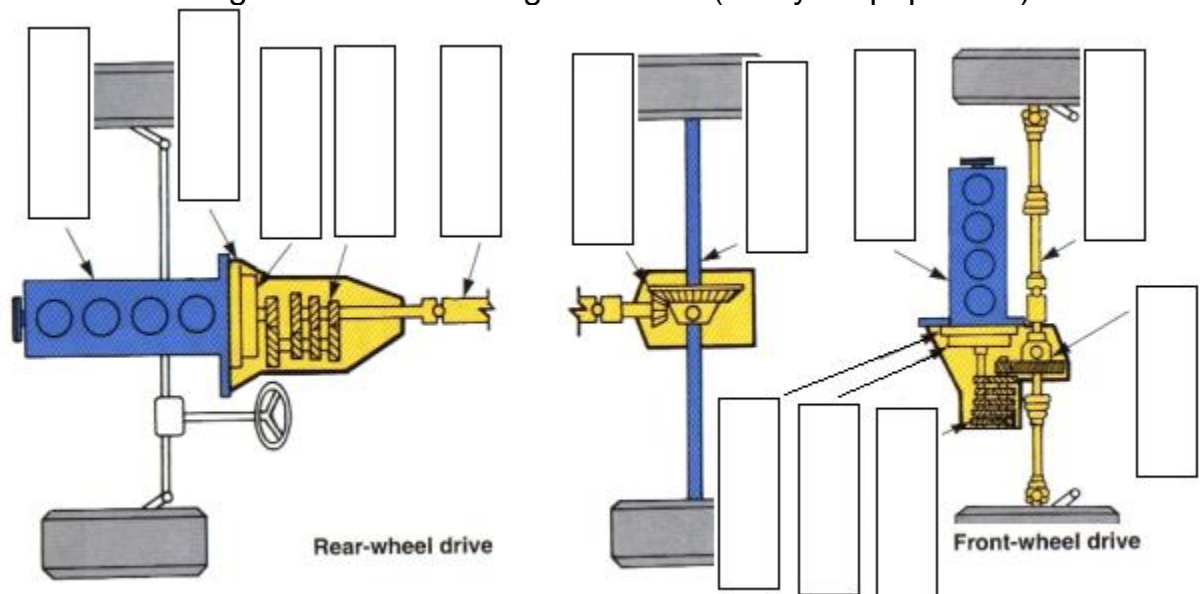
b.

2. DEFINE:

a. Power:

b. Torque:

3. Fill in the missing names on the diagram below (turn your paper 90°):



4. Watch the video “Clutch Principles.” In your own words, describe HOW a clutch ACTUALLY/ PHYSICALLY CONNECTS and DISCONNECTS the engine from the transmission (convince me you know what is happening between the engine and transmission):

5. Describe using your own words what their specific PURPOSE is of these clutch parts:

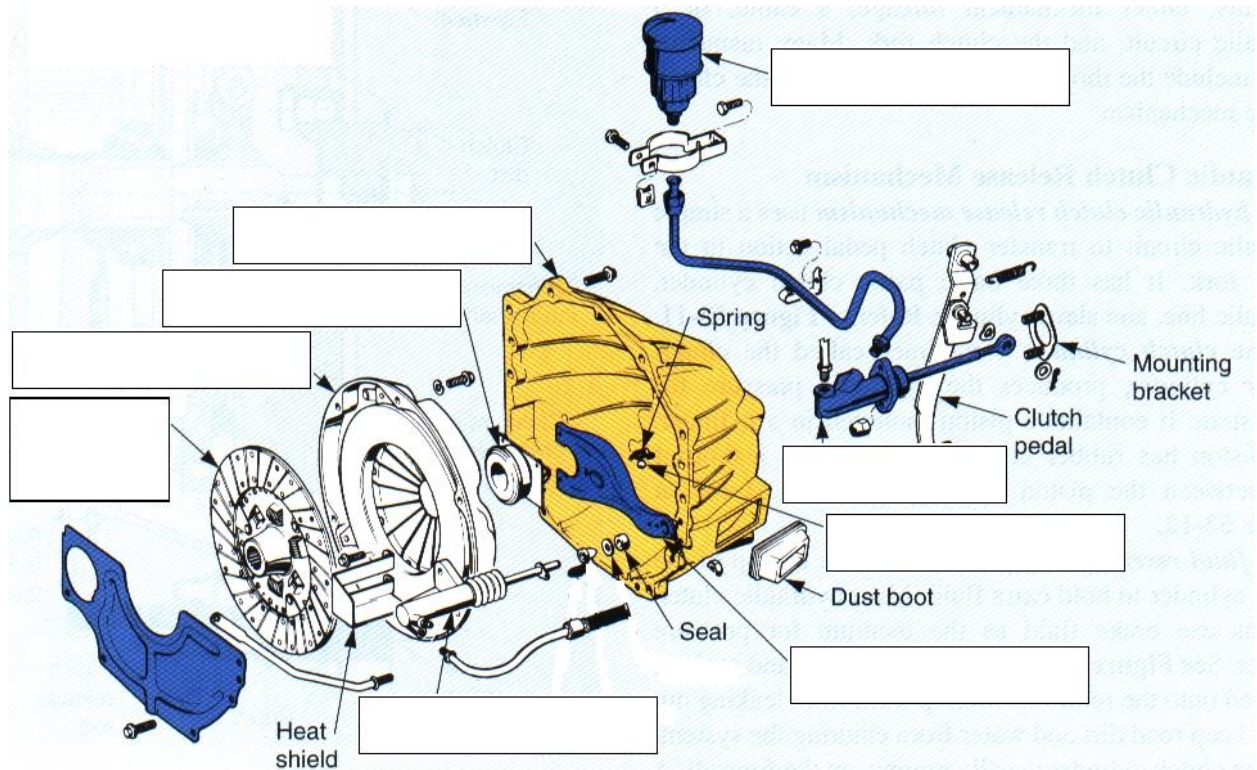
a. Flywheel:

b. Clutch Disc:

c. Pressure Plate:

d. Throw-Out Bearing:

6. Identify the following components:



7. Why do we need a transmission?

8. Describe the following terms using your own words:
 - a. Gear Reduction (Underdrive):

 - b. Overdrive:

9. A drive gear has 12 teeth, a driven gear has 48 teeth.
 - a. What is the gear ratio?

 - b. Is this overdriven or underdriven?

10. Why would I pick Helical gears over Spur Gears?

11. What are three different types of lubrication used in manual transmissions (note: they are not interchangeable)?
 - a.

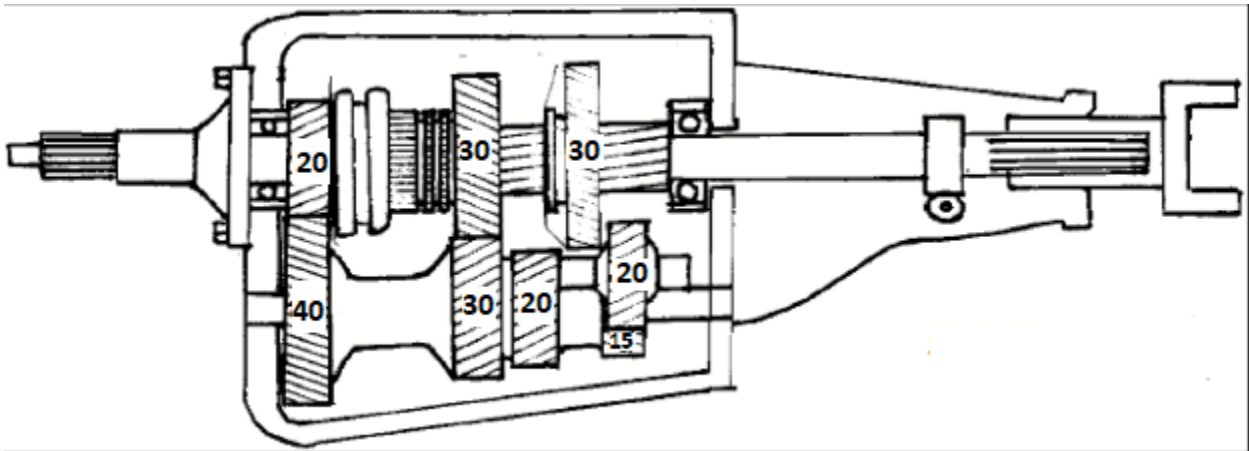
 - b.

 - c.

12. (VIDEO QUESTION) How do you Check Gear Box Oil in a typical manual transmission?

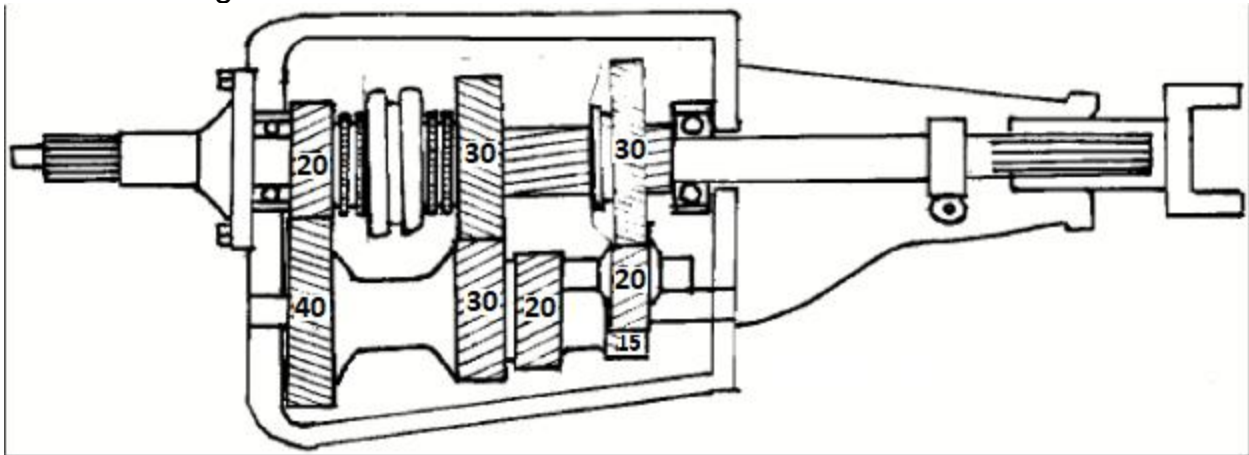
13. Describe, using your own words, how the synchronizer rings make shifting smooth and effortless:

14. What gear is the transmission below in?



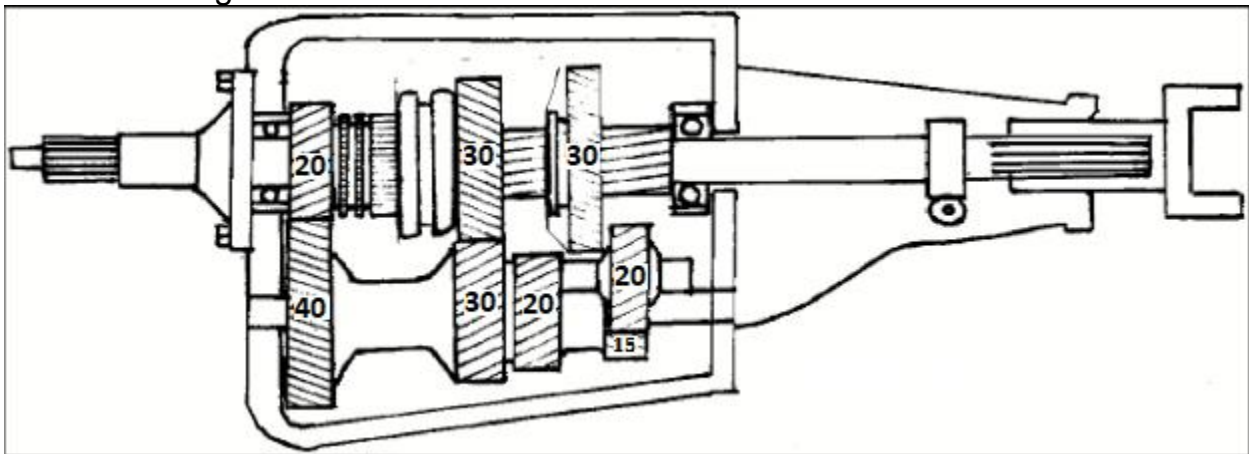
a. What is the gear ratio of the gear above?

15. What gear is the transmission below in?



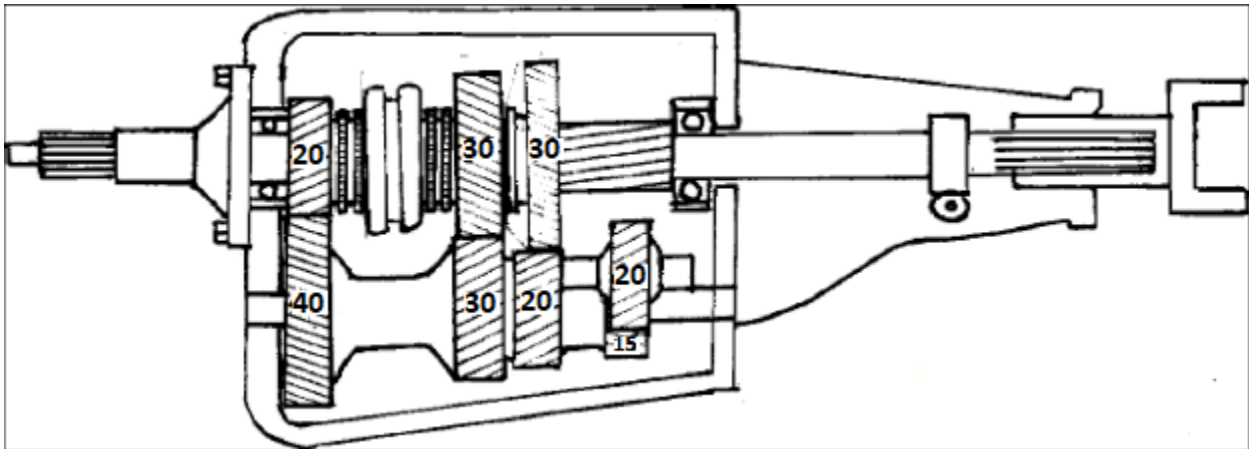
a. What is the gear ratio of the gear above?

16. What gear is the transmission below in?



a. What is the gear ratio of the gear above?

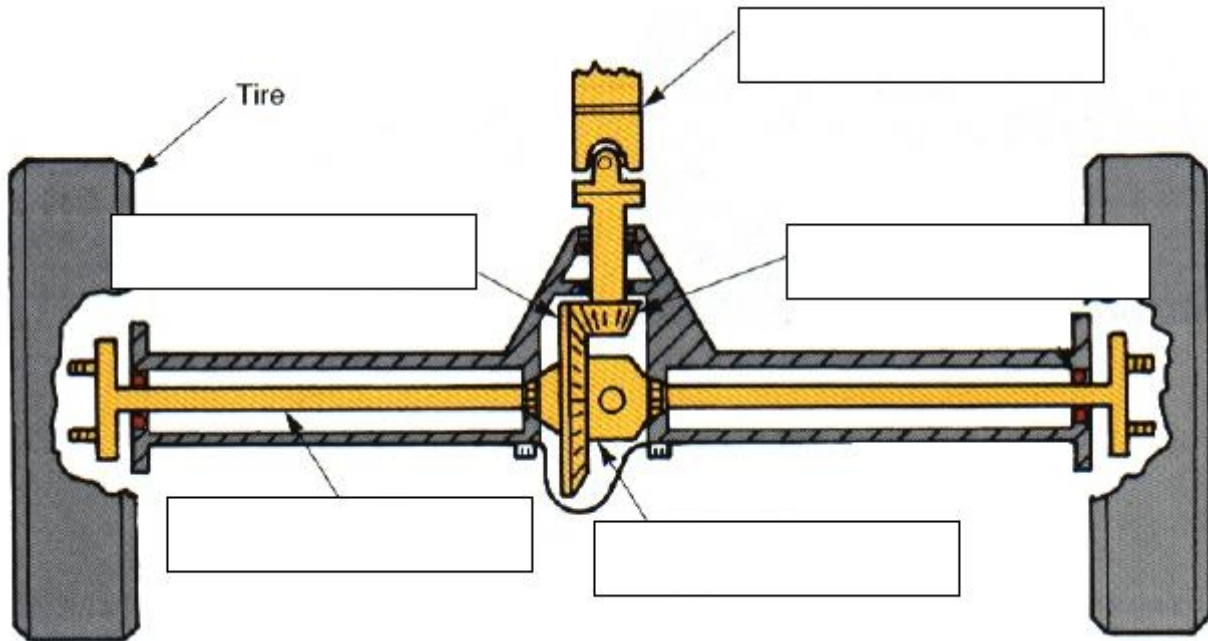
17. What gear is the transmission below in?



a. What is the gear ratio of the gear above?

18. Describe how to change a universal joint:

19. Fill in the missing names on the diagram below:



20. Watch the awesome video "Around the Corner (1937)" and describe **HOW** a differential allows you to turn corners (yes, this is hard):