

Animation Worksheet: Power Flow Simpson Geartrain

Name: _____ Date: _____

1. A Simpson geartrain is a type of compound planetary gear set consisting of two simple planetary gear sets that share a common _____.
2. The Simpson geartrain is capable of producing three forward gears, one reverse gear, and a _____ gear.
3. During a first gear shift, the _____ clutch engages, connecting the input shaft directly to the input ring gear.
4. In first gear, the _____ clutch (or overrunning clutch) holds the carrier stationary against forward rotation.
5. First gear provides a high starting torque with a specific output ratio of _____.
6. When shifted to second gear, the forward clutch remains engaged and the _____ band applies to hold the shared sun gear stationary.
7. The output ratio for second gear is _____, which balances acceleration and efficiency during moderate loads.
8. In third gear, both the forward clutch and the _____ clutch engage, locking the system for direct drive.
9. The third gear optimizes fuel economy on highways with a gear ratio of _____.
10. In reverse gear, the _____ band applies to hold the carrier stationary while the unit rotates backward.