

Homework

1. Fill in the blanks for the following (20%)
 - A. Ratchets give _____ motions
 - B. For ratchets, the _____ stops the wheel from slipping back
 - C. Drives and Gearing provide _____ connections
 - D. In friction drives, a _____ is often employed to prevent belt slip
 - E. An _____ is a tensioning mechanism is used to take up slack in a belt
 - F. In timing belts, the belt has _____ to engage the notches in the pulley wheels
 - G. In chain and sprocket drives, _____ can be added or removed
 - H. Spur gears have the same number of _____
 - I. In a _____ drive, the geared wheel meshes with a toothed rack
 - J. In a _____ drive, the shaft has a screw thread that meshes with a toothed wheel
 - K. In bevel gears, the 2 wheels mesh at _____ degrees
 - L. The _____ is simpler form of the bevel gear and is easier to fabricate
 - M. In bevel gears, the _____ changes from horizontal to vertical (and vice-versa)

2. Answer the following (10%)
 - A. Sketch a friction belt drive where the driving and driven wheels counter-rotate
 - B. Sketch a friction belt drive where the driving and driven wheels are rotating in different rotational planes

3. Define (1 to 2 sentences), describe (1 to 3 paragraphs) and provide sketches to support you definitions and descriptions for the following (10%)
 - A. Worm Gears

 - B. Ratchets used to lift heavy loads

4. Sketch and describe the 4 cycles of an 8-notch ratchet-crank mechanism (10%)