

activity: 1.1.4

1/13/16

1.

Pulley	CW or CCW
A	CW
B	CCW
C	CW
D	CW

2.

	Ratio
B:A	$3:6 = \frac{1}{2}$
C:A	$10:6 = \frac{5}{3}$
D:A	$8:6 = \frac{4}{3}$

3.

	Pulley A = 120 Ft-lb	$\frac{g_r}{1} = \frac{t_{out}}{t_{in}}$
Torque values		
B	$\frac{3}{6} = \frac{t_{out}}{120}$	60 Ft-lb
C	$\frac{10}{6} = \frac{t_{out}}{120}$	200 Ft-lb
D	$\frac{8}{6} = \frac{t_{out}}{120}$	160 Ft-lb

Conclusion

1. Timing belts provide less slipping and Synchronizes with combustion cycle of a car engine. A timing belt is more like a chain and sprocket system except reversed. The teeth are on the chain and the sprockets catch them.

2. The size of the axle powering the input or sprocket to harness more speed from the output can be manipulated by lessening the size of the axle.  
 Kyle Marquez

3. You are using more torque and effort force because of the steepness of the hill. When changing gears you gain more momentum/torque making it easier to go up a hill.