Answers to Sample Quiz 4

1. \( H = 2h \) where \( H \) is the initial height and \( h \) is the final height.

2. \( \frac{4}{m} \sqrt{\pi r f (m + 2M)} = v \) where \( r \) is the radius of the ring, \( m \) is the mass of the ring, \( M \) is the mass of the person, and \( f \) is the frictional force.

3. \( \frac{1}{\cos \theta_2 \sin \theta_1} L = x \) where \( \theta_1 \) is the angle of the cable to the horizontal at the end of the bridge nearest the com and \( \theta_2 \) is the angle of the other cable to the horizontal. \( L \) is the length of the bridge.

Conceptual questions

1. a       6. c 
2. d       7. b 
3. e       8. c 
4. a       9. c 
5. c       10. e