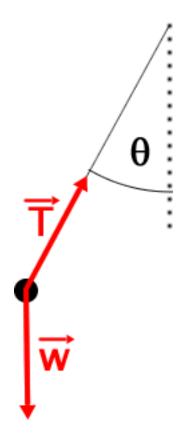The figure is the free body diagram for Tarzan at the moment that he steps off the branch. The magnitudes of the forces are not necessarily drawn to scale. The magnitude of the tension in the vine, **T**, is:

1. w sin (θ)

2. w cos (θ)

3. **w**

4. None of the above.