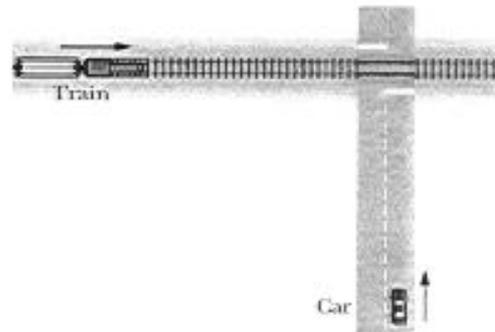


Physics 101-Rec
Quizz # 3

Instructor: Dr. Mekki

Name: Key Id#: _____ Sect.#: _____

The train has a velocity of 80 km/h relative to the ground, while the car has a velocity of 120 km/h relative to the ground.

- (a) What is the velocity of the train relative to the car?

$$\vec{V}_{TG} = 80\hat{i} \text{ (Km/h)}$$

$$\vec{V}_{CG} = 120\hat{j} \text{ (Km/h)}$$

$$\vec{V}_{TC} = \vec{V}_{TG} + \vec{V}_{GC} = \vec{V}_{TG} - \vec{V}_{CG}$$

$$\boxed{\vec{V}_{TC} = 80\hat{i} - 120\hat{j}} \text{ (Km/h)}$$

- (b) What is the velocity of the car relative to the train?

$$\boxed{\vec{V}_{CT} = -\vec{V}_{TC} = -80\hat{i} + 120\hat{j}} \text{ (Km/h)}$$