

September 14, 2012

Quiz 1

This is a closed book and closed note quiz.

```
# This code creates a cart on a track and then prompts you with some
# questions... so you can animate the cart

from visual import*

# Create a track that is 6 meters long, 10 cm wide and 5 cm high. It is blue.
track = box(pos=(0,0,0), length=6, width=0.1, height=0.05, color=color.blue)

# Create a vehicle. It is 10 cm long, 6 cm wide and 4 cm high.
# It is above the track and on the right of the track.
cart=box(make_trail=True, pos=(-2.95, 0.06, 0), length=0.1, width=0.06, height=0.04,
        color=color.green)

# originally, when at the left side of the track, the cart was at (-0.95, 0.06,0)

# Set the cart velocity so it travels the length of the track in 3 seconds
```

(B)

```
# This is the delta time - small change
dt = 0.01
time = 0

# Check to make sure the time is less than 10 seconds. If that is true then
# keep running this while loop... if not stop and move to the next command
while time < 10:

    # Limit how fast the program runs - which allows me to see the cart move
    rate(100)

    # We need some physics here... how is the carts position going to change?
```

(C)

```
# Check where the cart is and run a command...
```

(D)

```
# Print the position and velocity of the cart at the end.
print(" Finally I am done moving the cart. ")
```

- A. What color is the cart?
- B. Write a command to give the cart the correct velocity. The cart needs to travel the length of the track in 3 seconds.
- C. Write a command to make the cart move.
- D. Write some commands to make the cart switch directions at the end of the track.