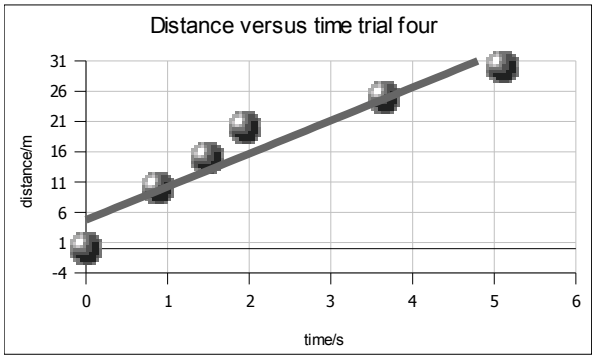
SC 130 Physical Science median term • **Name:**

1. _____ A box of soap is 9.6 cm long by 3.9 cm thick by 6.1 cm wide. Calculate the volume of the box, writing the answer including units and using the correct number of significant digits.

2. For question two, use the following data from trial four of the ball roll experiment. The ball is thrown at a time of zero seconds.

trial four	
time/s	distance/m
0.00	0.00
0.88	10.00
1.49	15.00
1.95	20.00
3.65	25.00
5.10	30.00

slope	5.47
intercept	4.75



a. _____ Physically, what is the slope in the ball roll experiment?

b. _____ What are the units of slope in the ball roll experiment?

c. _____Given that distance = slope × time + intercept, predict the distance the ball would roll after ten seconds. [Ten seconds after being thrown.]

d. _____ Given that distance = slope × time + intercept, predict the time for the ball above to travel 50 meters.

3. Marble momentum questions.

a. _____ If two marbles collide with a line of five marbles on a ruler track, how many marbles are ejected and roll on off the track?

b. Why do you think the marbles know what to do?

c. Explain how the speed of the marbles colliding with a line of marbles on a marble track affects the speed of the marbles ejected from the line.

d. _____ A 5.20 g duck marble covers 30.0 cm in 0.60 seconds. What is the speed of the marble in centimeters per second?

e. _____ A 5.20 g duck marble covers 30.0 cm in 0.60 seconds. What is the linear momentum of the marble in g cm/s?

4.Heat conduction laboratory questions.

a.Which substance conducted the most heat in the heat conduction laboratory?

b.Why do you think those substances conducted the most heat?

c. Explain how you think heat moves by conduction.

5. a. Where are you right now in terms of latitude and longitude?
Latitude: _____
Longitude: _____

b. _____ Is that the right latitude and longitude?

e. How do you know?

f. How can you determine the right latitude and longitude?

6. Why do you think nature is mathematical?