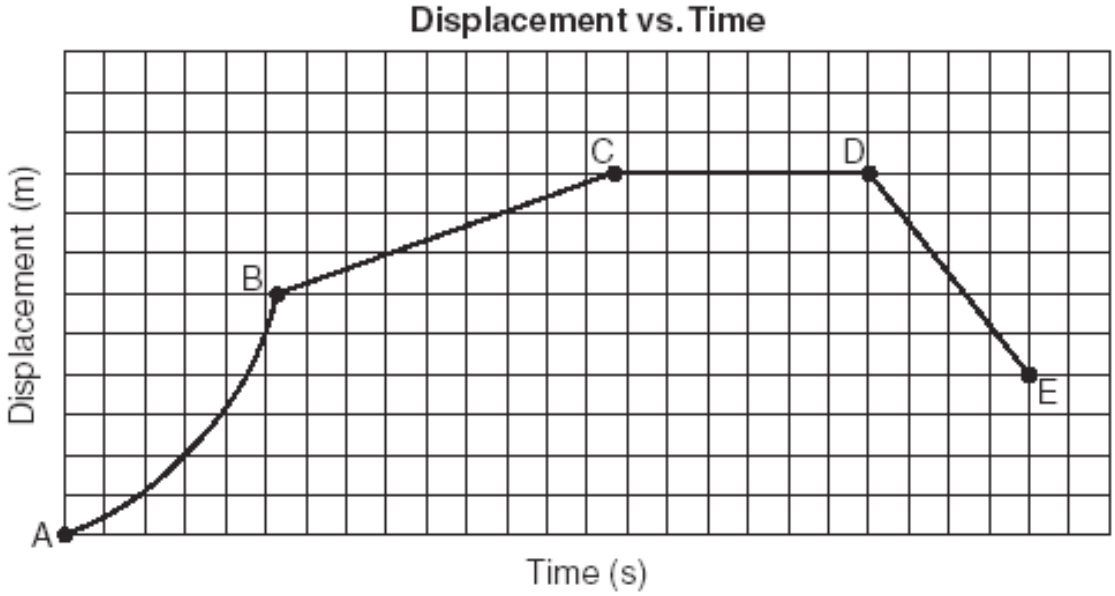
Name _____ # _____ Section_____

Part B and C Questions - Show All Work

Kinematics



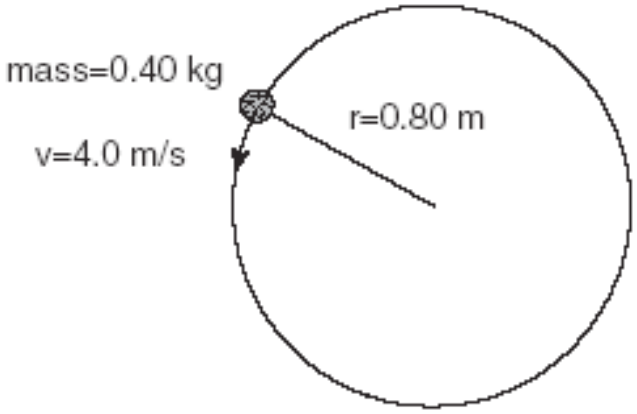
Describe the velocity of the object plotted in the graph above during the following intervals

1. A to B **2.** B to C **3.** C to D **4.** D to E

Circular Motion

5. Draw the instantaneous velocity vector.

6. Draw the centripetal force vector.



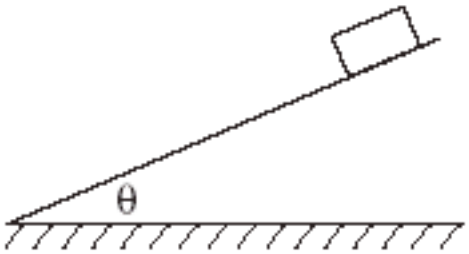
Forces

Carefully draw AND **LABEL** the following forces on the box **resting** on a ramp

7. normal force

8. friction force

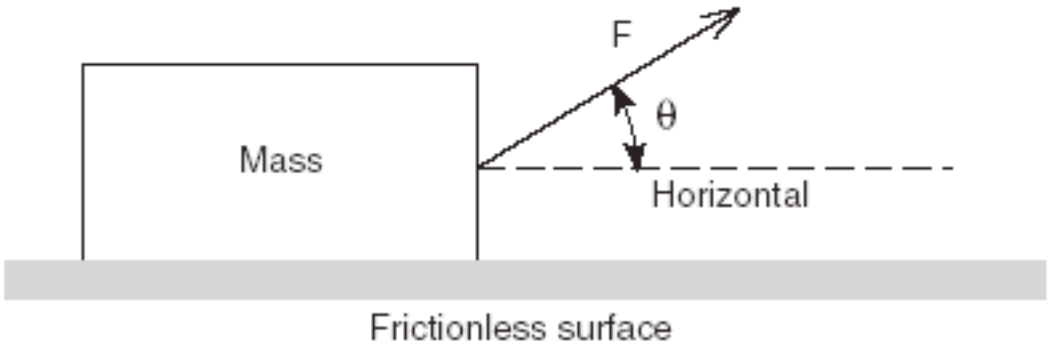
9. weight force



Components

10. Measure and record the angle shown below.

11. If F = 5 N, how much force is actually responsible for moving this block?

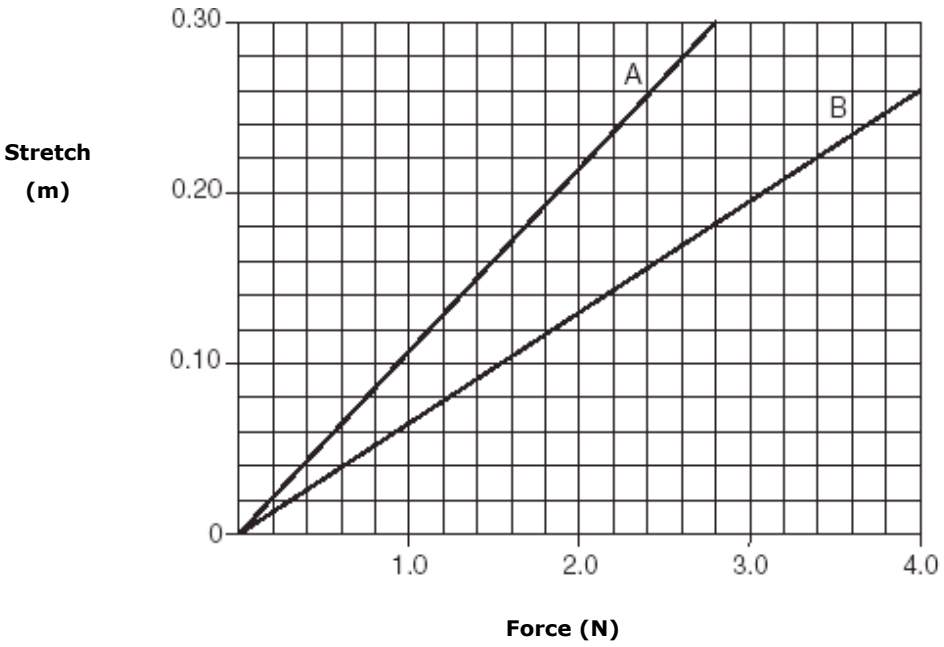


Energy

Find the spring constant for:

12. Plot A

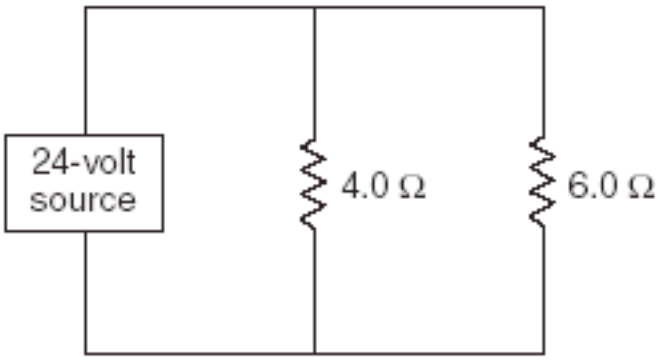
13. Plot B?



Circuit Electricity

14. Draw an ammeter into this circuit in a place where it could measure the current in the 6 ohm resistor.

15. Draw a voltmeter into the picture in a place where it could measure the voltage in the 4 ohm resistor.



16. What is the total resistance of this circuit? **Regents Rules**

Relationships

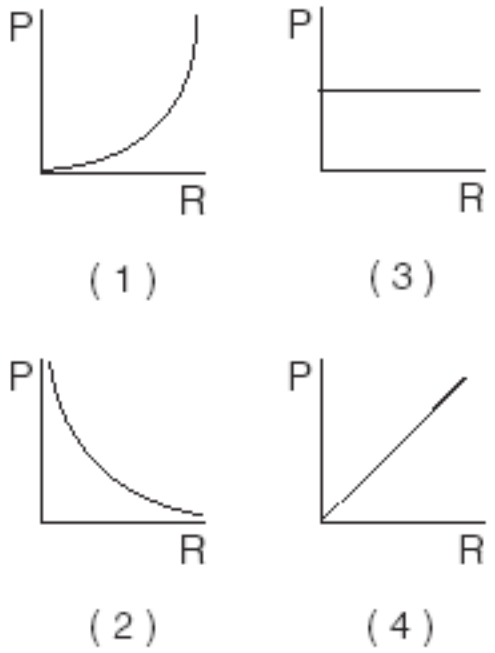
What is the mathematical relationship shown in:
(Direct?, Direct Square?, Inverse?, Inverse Square?, No Relationship?)

17. Plot 1? _____

18. Plot 2? _____

19. Plot 3? _____

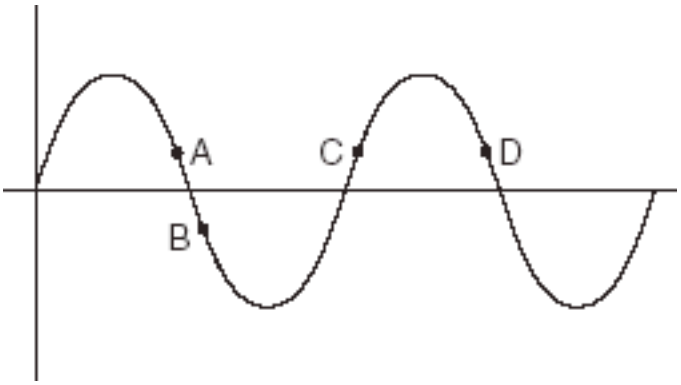
20. Plot 4? _____



Wave Characteristics

21. Use a ruler to find the amplitude of this wave.

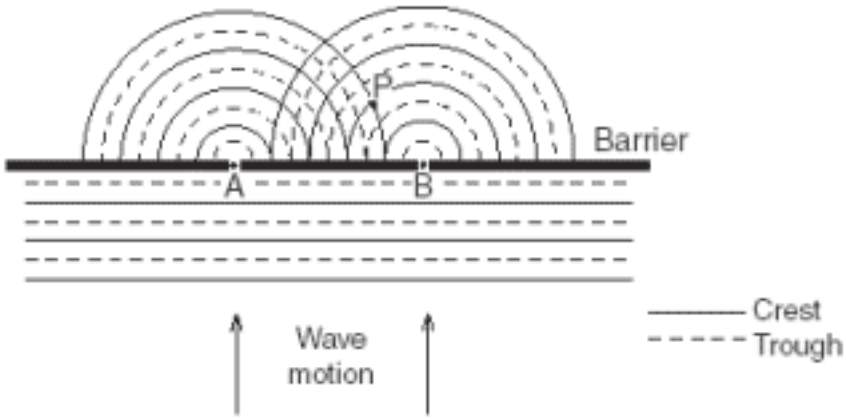
22. Use a ruler to find the wavelength of this wave.



Interference

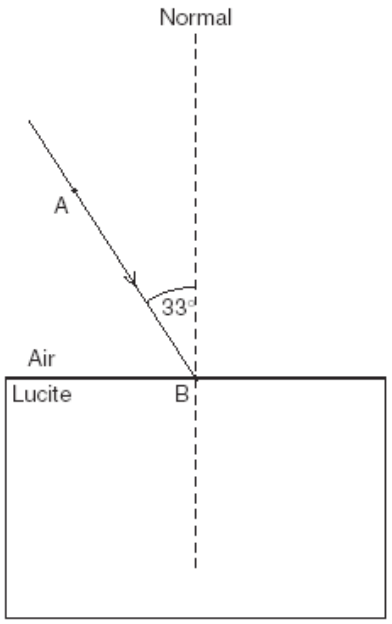
23. Carefully draw the central maximum into the picture given.

24. Carefully draw the two first-order bright lines.

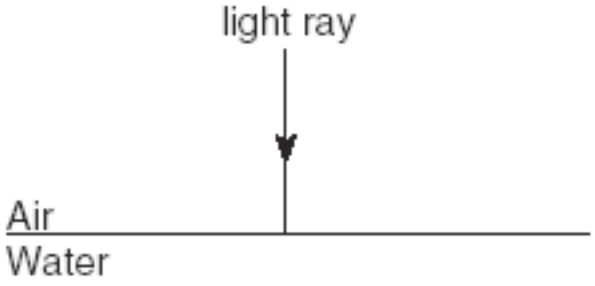


Refraction

25. Find the angle of refraction for light from air entering into Lucite at an angle of 33 degrees.



26. Carefully draw the refracted ray.



27. Draw an arrow to show how the light ray will enter the water.

Plotting Data

28. Plot the data on the graph provided in the answer sheet. **Draw the best fit line**

29. Using your graph, determine the power delivered to the circuit at a current of 3.5 amperes.

_____

Current (amperes)	Power (watts)
0.75	2.27
1.25	3.72
2.25	6.75
3.00	9.05
4.00	11.9

30. Given the mathematical relationship that exists between these two variables, how would the power change if the current were increased 10 times?

_____

