

Math 80
Exam 1
January 30th, 2008

Name: _____

1. Your exam contains 6 questions and 5 pages; Please make sure you have a complete exam.
2. The entire exam is worth 100 points. Point values vary and these are indicated on each problem. You have 50 minutes for this exam.
3. Make sure to **ALWAYS SHOW YOUR WORK**. If in doubt, ask for clarification.
4. If you need extra space, use the back of the exam and clearly indicate this.
5. You are allowed one 3×5 notecard for handwritten notes (both sides).
6. Simplify answers as much as possible.
7. Put a box around your final answer where applicable.

Problem	Total Points	Score
1	10	
2	15	
3	24	
4	9	
5	11	
6	31	
Total	100	

1. (10 pts.) Farmer Bob wants to build a fenced rectangular garden for which the **length is 3 times the width**. He wants the **perimeter** to be 160 meters because that is all the fencing he can buy.

What should be the length and the width of the garden? (Use equations to solve and write your answer in a complete sentence.)



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2. (15 pts.) You participate in a biathlon that involves running and swimming.
You run at a speed of 8 mph and you swim at a speed of 4 mph.

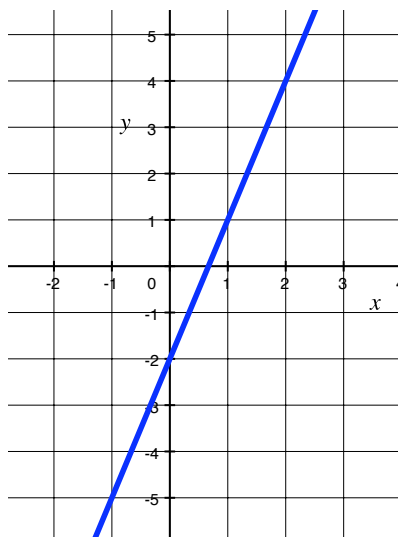
If you **swim for 1.5 hours** and you travel a **total of 10 miles**, how long did you spend running?
(Use equations to solve and write your answer in a complete sentence.)

3. (24 pts.) Solve the following equations using the techniques from chapter 2. (No guessing and checking.)

(a) (12 pts.) $60t - 50 = 15t - 5$

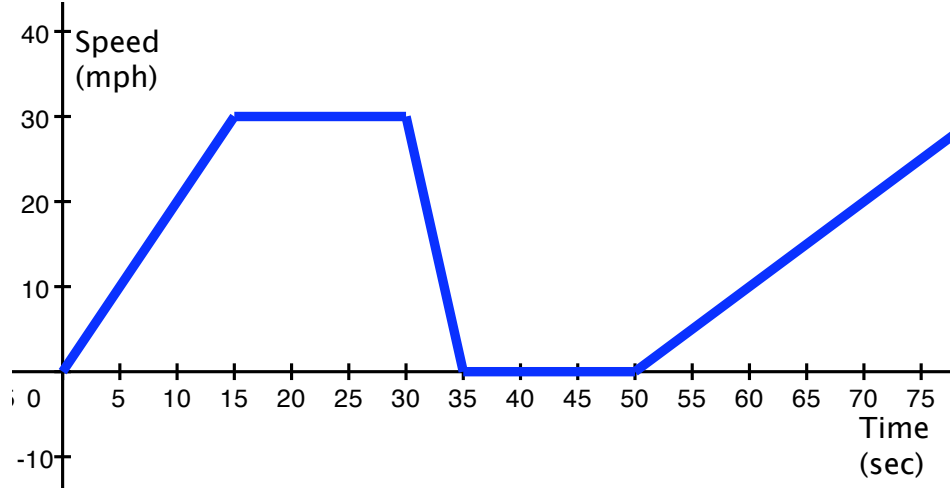
(b) (12 pts.) $\frac{1}{5}(x + 5) = \frac{3}{2}$

4. (9 pts.) The line L_1 is shown below. Find the slope of a line **perpendicular** to L_1 .



Slope of Line Perpendicular to $L_1 = \underline{\hspace{2cm}}$

5. (11 pts.) The **speed of a car** is shown in the graph below. At some time, the driver slows down and stops at a stop light, then continues driving.



- (a) (4 pts.) Approximately how fast is the car driving at the time 10 seconds? (Include units.)
- (b) (4 pts.) Approximate **all** of the times that the car is going 10 mph. (Include units.)
- (c) (3 pts.) How long was the driver stopped at the stop light?

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6. (31 pts.) Consider the linear equation $4x - 3y = 8$ for all the parts questions below.

- (a) (4 pts.) Is $(1, -4)$ a solution to the equation?

#6 Continued on next page

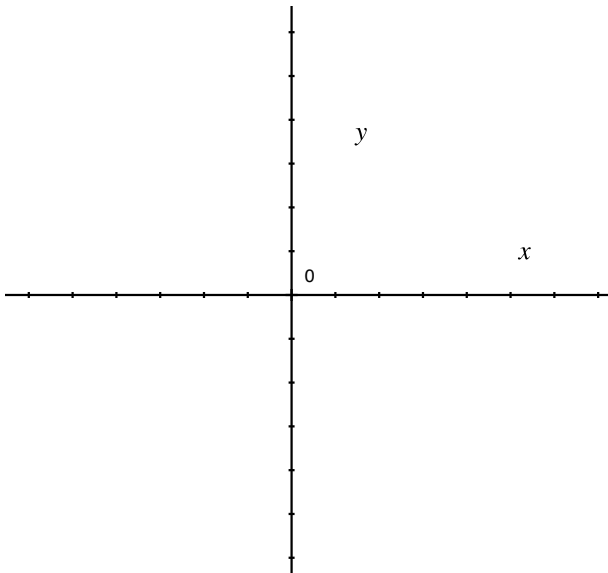
#6 Continued:

(b) (8 pts.) Complete the following table of ordered pairs for the equation $4x - 3y = 8$.

x	y
5	
	8

(c) (8 pts.) Find the x and y -intercepts for the graph of $4x - 3y = 8$.

(d) (6 pts.) Graph $4x - 3y = 8$. (Label whichever points you use to graph and put a scale on your axes.)



(e) (5 pts.) What is the slope of the line from part (d)?