MATH 34A WORKSHEET (OCT 20TH)

"Car problems" - Please do these problems as practice before the next section. One of them will appear on next week's quiz (exact same wording but different numbers). Try to use the following steps when you solve the problems:

1. Draw a picture. Label all the given information. Give a name to the unknown.
2. Write an equation (in words) to describe what has to be true in the situation.
3. Translate the words in terms of the numbers we know and the unknown.
4. Solve the equation.

1. Car A left Santa Barbara at noon traveling along a route of 120 miles to Paso Robles. Car B left Paso Robles 1 hour after Car A left Santa Barbara and traveled at the same speed as Car A. They meet at 2pm. How fast do the cars travel?

2. Car A leaves Sacramento at noon travelling at 60mph on a road 560 miles long to Los Angeles. Car B leaves Los Angeles at 2pm travelling at constant speed along the same road to Sacramento. They meet at 6pm. What was the speed of Car B.

3. Car A and Car B travel along the same route. They start at the same time. They finish the journey at the same time. The total journey takes 8 hours. Car A travels at 60mph for the first 3 hours and at 40mph for the rest of the time. Car B travels twice as fast for the first 2 hours as it does for the remaining time. How fast does car B travel during the **first 2 hours** of the journey?

How do we interpret speed from the distance-time graph?

Graphing functions: Let $y = f(x)$ be the function shown in the graph.

Try to answer the following equestions using the words:

∗horizontal change OR vertical change
∗shift to the right OR shift to the left
∗shift up OR shift down
∗dilation OR contraction
∗reflection along y-axis OR reflection along x-axis

Let a be any positive number. How would you graph the following functions?

$f(x + a)$

$f(x - a)$

$f(x)+a$

$f(x) - a$

Let b be any number such that $b \geq 1$. How would you graph the following functions?

$f(bx)$

$f(\frac{1}{b}x)$

$bf(x)$

$\frac{1}{b}f(x)$

What about these two functions?

$f(-x)$

$-f(x)$