Name_____
Date_____

chapter 9

**Advanced Algebra Assignment #2**
**~~Chapter 8~~ Parametric Equations ( Page 424-483)**
Complete the following problems in class.
Make accurate graphs and tables.

1) A car is driving off a cliff at 20 meters per second. The cliff is 10 meters wide and 100 meters tall. Make a parametric table to show the time and the x and y distances. Show when the car hits the ground. Make an accurate graph of the situation. ( The parametric for the y is $100-5t^2$)

| t | x | y |
|---|---|---|
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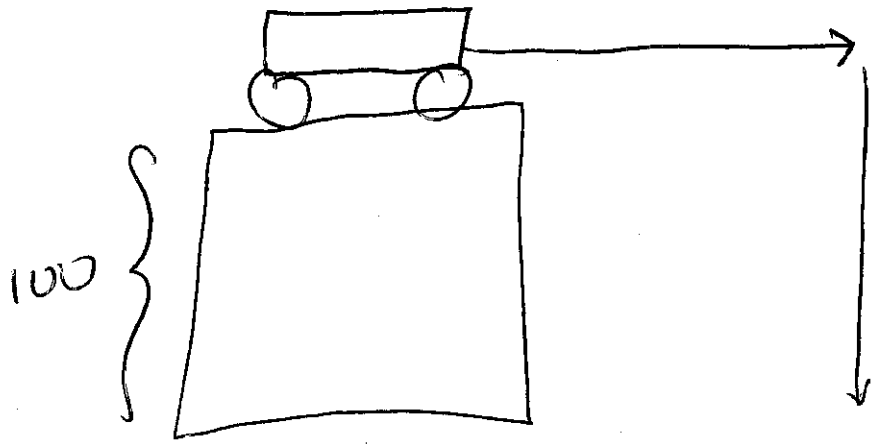



$0 = 100 - 5t^2$

$t = 4.5$ sec

$x = 20t$

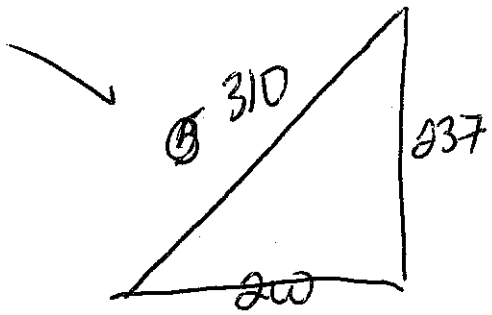
$x = 20(4.5)$

90 feet

2) A ship is traveling on a bearing of 40 degrees. The ship is traveling at 50 miles per hour.

a) Draw the correct right triangle picture
b) Write the parametric equations for the horizontal and vertical distances
c) Make a parametric table.
d) How many hours will it take until the ship is 200 miles east of where it started (use your table)
e) What is the vertical displacement when it is 200 miles east of where it started?
f) What is the total distance that the ship has traveled when it is 200 miles east of where it started?

**Right Triangle Picture:**




**Parametric Equations:**

| t | x | y |
|---|---|---|
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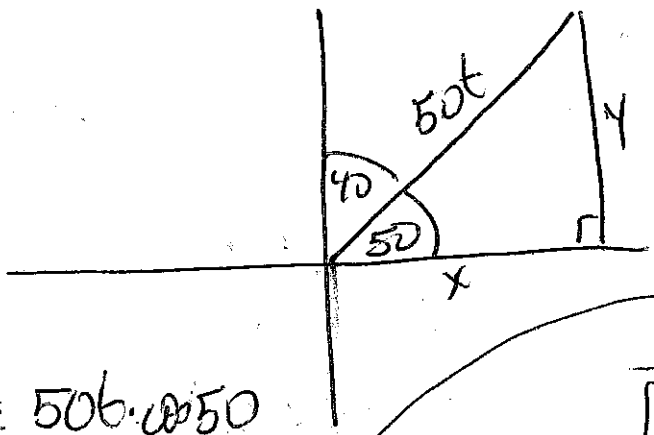


$\sin 50 = \frac{y}{50t}$

$y = 50t \cdot \sin 50$

$\cos 50 = \frac{x}{50t}$

$50t \cdot \cos 50 = x$

$200 = 50t \cdot \cos 50$

$6.2 = t$

$50(6.2)\sin 50$

237 miles