SOLUTIONS FOR REVIE	W OF CHAPTER	4 AND SIG FIGS		
1) 1) round off to 3 sig figs:				
a)5610 meters	b) 5.99 X10 ³	sec	c) .00125 cm	d) V = 21.8 m/sec
2) position changes rel	ative to somethi	ing else	Fixed object.	
3) fast and slow				
4 average speed	a)	v = total dist/to	otal time	b) $\frac{v = V_1 + V_2}{2}$
5) speed at particular	instant of time	no		
6) distance traveled du	iring time interv	al	speed in a	particular direction
7) total path length		final position -	- initial position	
8) vector: displacem	ent?	vector: veloci	ty	
10) constant velocity =	same speed ar	nd direction		m/sec
11) speed changes, dir	ection changes ,	both change		
12) v = $[\Delta d]/\Delta t$		a = $[\Delta V]$ Dt		
13) Slowed motion d	own, less accele	ration		
14) a) speed up				
b)slow down				
15) m/sec ²	g = ac	celeration due to	o gravity	
16) x1, x2, v1,v2,a,t		y1,y2,v1,v2,g,t		
17) x ₂ = _{x1} +v ₁ t+1/2at ²		$y_2 = y_1 + v_1 t - 5t$	2	
$V_2 = v_1 + at$		$v_2 = v_1 - 10t$		
18) HOW FAST v = 10t	? HOW I	FAR D = 5t ²		
Problem 1) A train tr	avels along a st	raight track at	20 m/sec. The tra	in travels 1800 meters in

in how many seconds?

X1=	0	x ₂ =	x1 +v1t	+1/2at ²
X2=	1800	1800 =	= 0 + 20t	:+0
V1=20	m/sec	t = 90	sec	
v2=20	m/sec			
a=0				
t= ?				

Problem 2) A car traveling at 5 m/sec increases to 15 m/sec in 20 seconds. What is the acceleration of the car?

X1= 0	v ₂ =	v_1 +at
X2= ?	15 =	5 + a[20]
V1=5 m/sec	10= 2	0a
v2=15 m/sec	a = 0.	5 m/sec ²
a=?		
t= 20		

Problem 3) a rock is dropped off a vertical cliff that is 845 m high. How many seconds until it hits the ground? How fast is the rock traveling when it hits the ground?

y1= 845 m	$y_2 = y_1 + v_1 t -5t^2$	
y2= 0 m V1=0 m/sec v2=? a=g= -10 m/sec ² t= 2	$0 = 845 + 0t - 5[t^2]$ $845 = 5[t^2]$ $169 = t^2$ $t = 13 \sec$	or D = 5t ² 845 = 5t ² t = 13 sec
	v2 = v1 + at	v = 10 t =130 m/sec↓

v2 = 0 + 13(-10) = -130 m/sec

Problem 4) A ball is tossed straight up at 50 m/sec.

A)How many seconds does it travel up? **5 sec** B) how high does it travel?

C)How many seconds until it hits the ground? **10 sec** D)How fast is it traveling when it hits the ground?

y1= 0m	v2 = v1 + at
V1=50 m/sec v2=0	0= 50 -10t
a=g= -10 m/sec ² t= ?	t = 5 sec
	y ₂ = y ₁ + v ₁ t -5t ² y2 = 0 + 50[5] - 5[5][5] = 250 - 125 = 125 m

A)How many seconds does it travel up? **5 sec** B) how high does it travel? **125 m** C)How many seconds until it hits the ground? 5 sec up and 5 sec down = **10 sec** D)How fast is it traveling when it hits the ground? -50 m/sec or 50 m/sec

Problem 5) Motion diagrams: Describe the motion of objects I and II. both travel at constant speed Which object moves slower? Object II If the first dot is recorded at time =2 seconds, and a dot is recorded every 2 seconds, how many seconds are the objects moving? **20 sec Object I:**



Problem 6) Sketch a motion diagram of an accelerating object

Problem 7) refer to d-t graph:

Which object travels faster? **A** What does the slope on a D-T graph ? **velocity** What is the velocity of object A **10 m/sec** what is total distance object Btravels?**50 m**



Problem 9) what type of graph is this? V-t graph

What is the velocity? 25 m/sec

What is the acceleration? **0 m/sec²**

What is the total displacement? 1125 m

problem 8: refer to v-t graph:

slope on a V-T graph represent? **acceleration** What is acceleration of object C**? 2.5 m/sec²** area of a V-T graph represent? **Displacement** What is the total displacement of C? **500 m**



