77777 First Answer is Correct Answer					77777	
Inst	ructor(s): N. Sulli	ivan				
PHY 2004			PHYSICS DEPARTMENT Midterm Exam 1		September 19, 2011	
Nan	ne (print, last first):		Signature:		
	On	my honor, I have neith	er given nor received un	authorized aid on this e	xamination.	
(2) (3) (4) (5)	Code your test Code your name answer sheet. Print your name Do all scratch wo test, this exam pr Blacken the cir make any stray m The answers ar believe that no	number on your answer sheet. It on this sheet and sign it rk anywhere on this exactint out is to be turned in the cle of your intended marks or some answers not re rounded off. Cho	yer sheet (use lines 76 DARKEN CIRCLES also. In that you like. Circle in. No credit will be give answer completely, hay be counted as incorr	e your answers on the en without both answer using a #2 pencil or ect. Exact. There is no pe	eet for the 5-digit number). de your UFID number on your etest form. At the end of the	
			$g = 9.80 \text{ m/s}^2$			
1.	(4 points) A ball	is thrown up vertically	at 20 m/s. How high wi	ll the ball go?		
	(1) 20.4 m	(2) 2.04 m	(3) 5.10 m	(4) 40.8 m	(5) 7.10 m	
2.	(4 points) Jane se	ets out on a walk. She w	valks 8 km east and ther	n 15 km north. How far	is she from her starting point?	
	(1) 17 km	(2) 23 km	(3) 16 km	(4) 7 km	(5) 30 km	
3.	(4 points) A ston bridge above the		dge. It hits the water 2	seconds after it is dropp	ped. What is the height of the	
	(1) 19.6 m	(2) 39.2 m	(3) 27.6 m	(4) 4.9 m	(5) 9.8 m	
4.	(4 points) A bloc surface is 0.60. A	k of mass 10 kg sits on At what angle (in degree	an inclined plane. The s) must the block be rai	coefficient of static frict ised before it begins to s	ion between the block and the slide?	
	(1) 31°	(2) 75°	$(3)~42^{\circ}$	$(4)\ 25^{\circ}$	$(5) 62^{\circ}$	
5.				m/s. At time $t = 0$ the after 4 s of acceleration	automobile begins accelerating?	

(1) 12 m

(2) 0 m

(3) 6 m

(4) 3 m

(5) 9 m

6. (5 points) A police cruiser is traveling at 20 m/s. A car traveling in the same direction at 30 m/s passes the cruiser. At this moment the car begins to accelerate in the forward direction at a rate of 2 m/s², and the cruiser begins to accelerate in the forward direction at 4 m/s². How far does the cruiser travel until it catches up to the car?

(1) 400 m

(2) 500 m

(3) 200 m

(4) 100 m

(5) 200 m

7. (4 points) An astronaut wants to measure the acceleration of gravity on planet X. On Earth his powerful dart gun will shoot a dart a maximum horizontal distance of 30 m before the dart returns to the same height from which it was shot. He performs the same experiment on planet X, and finds that the dart gun shoots the dart a maximum distance of 60 m. What is the value of the acceleration due to gravity on Planet X?

 $(1) 4.9 \text{ m/s}^2$

 $(2) 7.6 \text{ m/s}^2$

(3) 9.8 m/s^2 (4) 14.8 m/s^2

 $(5) 2.5 \text{ m/s}^2$

Ir

(1) 3.27 m/s^2

 $(2) 6.54 \text{ m/s}^2$

Inst	cructor(s): N. Sull	ivan	PHYSICS DEPARTN	MENT		
	Y 2004		Midterm Exam		September 19, 2012	
Nar		<i>'</i>				
	On	my honor, I have neit	her given nor received un	authorized aid on this	examination.	
(2) (3)	Code your test Code your name answer sheet. Print your name Do all scratch wo test, this exam por Blacken the cir	number on your anson your answer sheet. on this sheet and sign in the angle of the turned or the turned or the following pour intended of your intended or the turned or turned or the turned or turned or the turned or the turned or the turned or turned or the turned or	t also. am that you like. Circle in. No credit will be give I answer completely,	e-80 on the answer shall COMPLETELY. Consequence your answers on the en without both answer using a #2 pencil of	de your UFID number on your etest form. At the end of the	
. ,	The answers a believe that no	re rounded off. Cho	may be counted as incorn cose the closest to exprect, leave the form b	act. There is no pe	enalty for guessing. If you	
	Traire in the answ	ver sneet separately.	$g = 9.80 \text{ m/s}^2$			
	(9 · 1) A 1	1 0 1	,			
1.	(3 points) A cycli	ist travels 8 km east an	d then 15 km north. How	w iar is sne from ner sta	arting point:	
	(1) 17 km	(2) 23 km	(3) 15 km	(4) 5 km	(5) 0 km	
2. (4 points) A pebble is dropped from the top of a water well. If the pebble takes 2 seconds to hit the well?					ds to hit the water, how deep is	
	(1) 19.6 m	(2) 9.8 m	(3) 39.2 m	(4) 0 m	(5) 4.9 m	
3.	(5 points) Car A is traveling with a constant speed of 10 m/s. A drives by car B which is at rest. As soon as A passes B, B accelerates with a constant acceleration of 10 m/s^2 . How long does it take B to catch up with A?					
	(1) 2.0 s	(2) 5.0 s	(3) 10.0 s	(4) 1.0 s	(5) 7.5 s	
4.	(6 points) An arrow is shot horizontally from the top of a 10 m tower. If the horizontal speed of the arrow is 12 m/s, how far from the foot of the tower does the arrow hit the ground?					
	(1) 17.1 m	(2) 12.3 m	(3) 10.0 m	(4) 8.5 m	(5) 2.5 m	
5.	. (4 points) An astronaut equipped with full gear can jump a horizontal distance of 1 m on the surface of the earth. On the surface of the moon the acceleration due to gravity is 1/6 th of the value on earth. How far can the astronaut jump on the surface of the moon with the same equipment and same energy?					
	(1) 6.0 m	(2) 3.0 m	(3) 1.0 m	(4) 0.0 m	(5) 12.0 m	
6. (4 points) A 100 kg car is traveling at 12 m/s. If the driver hits the brakes and the car skids to a stop i force of friction exerted by the tires as the car is braking?					· ·	
	(1) 720 N	(2) 360 N	(3) 120 N	(4) 1440 N	(5) 550 N	
7.			vn in the sketch, M_2 is 10 of the acceleration of the		M_1 M_2	

(3) 13.1 m/s^2

 $(4) 0 \text{ m/s}^2$

 $(5) 1.63 \text{ m/s}^2$

77777 Instructor(s): N. Sulli			
PHY 2004		DEPARTMENT	Santambar 22, 2010
	Exam 1	matura	September 22, 2010
Name (print, last first): On my honor, I ha	ave neither given nor r	eceived unauthorized	aid on this examination.
			E TOP OF EACH PAGE. answer sheet for the 5-digit
the state of the s		EN CIRCLES COMI	PLETELY. Code your UFID
(2) Print your name on this			
			r answers on the test form. At the se given without both answer sheet
(4) Blacken the circle of you			encil or blue or black ink. Do not
make any stray marks o			
(5) The answers are rounded		est to exact. There is n	o penalty for guessing.
(6) Hand in the answer shee	et separately.		
	g = 9	$9:80 \text{ m/s}^2$	
The first answer given on to 1. A ball is thrown up vertice (1) 20.4	cally at 20 m/s. How hi	gh will the ball go?	
(1) 20.4 m (2)	40.8 m (3) 5.1 m	(4) 2 m (5) 7.1	m
point?	she walks 5 km east an	d then 12 km north. H	low far is she from her starting
$(1) 13 \text{ km} \qquad (2)$	17 km (3) 7 km (4)	12 km	(5) 5 km
3. A stone is dropped from the bridge above the wat		er 3 seconds after it is	s dropped. What is the height of
(1) 44.1 m (2)	22 m (3) 10.5 r	m (4) 66 m	(5) 5.5 m
			atic friction between the block and ed before it begins to slide?
(1) 37^{o} (2)	53 ° (3) 89 °	(4) 5 °	(5) 45 °
5. An automobile is initially accelerating in the forwa other words, if $XI = 0$, w	rd direction at 4 m/s ² .	What is its net displac	0 the automobile begins tement after 4s of acceleration? (In
	9 m (3) 6 m	(4) 3 m	(5) 0 m
At this moment the car b	egins to accelerate in t	he forward direction a	ection at 30 m/s passes the cruiser at a rate of 2 m/s2, and the cruiser the cruiser travel until it catches

(1) 400 m

(2) 300 m

(3) 200 m

(4) 100 m

(5) 500 m

77777

7. An astronaut wants to measure the acceleration of gravity on planet X. On Earth her powerful dart gun will shoot a dart a maximum horizontal distance of 30 m before the dart returns to the same height from which it was shot. She performs the same experiment on planet X, and finds that the dart gun shoots the dart a maximum distance of 45 m.

What is the value of the acceleration due to gravity on Planet X?

(1) 6.5 m/s^2 (2) 3.8 m/s^2 (3) 9.8 m/s^2 (4) 12.4 m/s^2 (5) 15.9 m/s^2

8. A 0.02 kg bullet initially traveling at 500 m/s imbeds itself in a 2 kg block. What is the kinetic energy of the block immediately after the collision?

(1) 2500 J

(2) 2000 J

(3) 4500 J

(4) 3500 J

(5) 6500 J

77777

Instructor(s): N. Sullivan

PHY 2004		PHYSICS DEPARTA Midterm Exam		February 1, 2012		
Name (print, last first):		Signature:		· · · · · · · · · · · · · · · · · · ·		
On	my honor, I have neith	ver given nor received un	authorized aid on this e	examination.		
 Code your test Code your name answer sheet. Print your name Do all scratch wo test, this exam p Blacken the cin make any stray n The answers a 	on your answer sheet. It on your answer sheet. It on this sheet and sign it ork anywhere on this examination is to be turned it is to be turned in the order of your intended marks or some answers in the reunded off. Chool listed answer is corrected.	t also. In that you like. Circle In No credit will be give I answer completely, Inay be counted as incorr I ose the closest to expect, leave the form b	-80 on the answer sh COMPLETELY. Con your answers on the n without both answer using a #2 pencil of ect. act. There is no pe	eet for the 5-digit number). de your UFID number on your e test form. At the end of the		
		$g = 9.80 \text{ m/s}^2$				
1. (3 points) A ball	is thrown up vertically	at 25 m/s. How high wil	ll the ball go?			
(1) 31.9 m	$(2)~3.20~\mathrm{m}$	(3) 0.51 m	(4) 40.8 m	(5) 7.10 m		
2. (3 points) Jane se	ets out on a walk. She v	valks 8 km east and ther	n 3 km north. How far i	is she from her starting point?		
(1) 8.5 km	(2) 23 km	(3) 17.1 km	(4) 3 km	(5) 30 km		
	(3 points) A stone is dropped from a bridge. It hits the water 1.5 seconds after it is dropped. What is the height of the bridge above the water?					
(1) 11.0 m	(2) 39.2 m	(3) 19.6 m	(4) 5.5 m	(5) 1.10 m		
	(3 points) A block of mass 10 kg sits on an inclined plane. The coefficient of static friction between the block and the surface is 0.51. At what angle (in degrees) must the block be raised before it begins to slide?					
(1) 27°	(2) 75°	$(3)~47^\circ$	(4) 15°	(5) 67°		
	(4 points) An automobile is initially backing up at a speed of 5 m/s. At time $t = 0$ the automobile begins accelerating in the forward direction at 4 m/s ² . What is its net displacement after 4 s of acceleration?					
(1) 12 m	(2) 0 m	(3) 6 m	(4) 3 m	(5) 9 m		
this moment the	(5 points) A police cruiser is traveling at 20 m/s. A car traveling in the same direction at 30 m/s passes the cruiser. At this moment the car begins to accelerate in the forward direction at a rate of 2 m/s^2 , and the cruiser begins to accelerate in the forward direction at 4 m/s^2 . How far does the cruiser travel until it catches up to the car?					
(1) 400m	$(2) 27.9 \mathrm{m}$	(3) 100 m	(4) 15.7 m	(5) 175 m		
shoot a dart a ma She performs the	aximum horizontal dista same experiment on pla	nce of 30 m before the d	art returns to the same ne dart gun shoots the o	Earth his powerful dart gun will height from which it was shot. dart a maximum distance of 45		

(1) 6.5 m/s^2 (2) 7.6 m/s^2 (3) 9.8 m/s^2 (4) 14.8 m/s^2 (5) 2.5 m/s^2

- 8. (5 points) A 5 kg mass is held in equilibrium by 2 ropes as shown. What is the value of T_2 , the tension in rope 2?

 - (1) 36 N (2) 13 N (3) 47 N (4) 61 N (5) 72 N

