$Instructor(s): \ \textit{N. Sullivan}$

PHYSICS DEPARTMENT

PH	Y 2004		Midterm Exam 1		February 4, 2015	
Name (print, last first):		:	Signature:			
	On n	my honor, I have neithe	er given nor received und		camination.	
(2) (3) (4) (5)	Code your test n Code your name of answer sheet. Print your name of Do all scratch work test, this exam print Blacken the circ make any stray ma The answers are	number on your answer sheet. In this sheet and sign it is anywhere on this example of your intended arks or some answers me rounded off. Choosisted answer is correction.	also. n that you like. Circle; No credit will be given answer completely, u ay be counted as incorre	80 on the answer she COMPLETELY. Cod your answers on the a without both answer sasing a #2 pencil or act. act. There is no per	test form. At the end of the	
			$g = 9.80 \text{ m/s}^2$			
		Eac	ch question is worth 5	5 points.		
1.	Jane starts at the starting point?	town center and drives	4 km due northeast, and	then drives 5 km due s	outh. How far is she from her	
	$(1)~3.6~\mathrm{km}$	$(2)~2.8~\mathrm{km}$	(3) 1.6 km	$(4)~5.4~\mathrm{km}$	(5) 0 km	
2.	Joe drops a pebble travel?	e from a bridge. If the	pebble hits the water in	3 seconds after it is dro	opped, how far did the pebble	
	(1) 44.1 m	$(2) 22.1 \mathrm{m}$	(3) 14.7 m	(4) 88.3 m	(5) 34.5 m	
3.	Jack stands on sca the scales read 50	les in an elevator. Whe N. What is the acceler	n the elevator is at rest ation of the elevator?	the scales read 99 N. W	When the elevator moves down	
	(1) 5.0 m/s^2	(2) 9.8 m/s^2	(3) 2.5 m/s^2	(4) 7.0 m/s^2	$(5) 6.3 \text{ m/s}^2$	
4.		P pushes a 10 kg mass a efficient of kinetic fricti		e of P is needed to move	the block with an acceleration	
	(1) 59 N	(2) 98 N	(3) 37 N	(4) 15 N	(5) 72 N	
5.			peed of 5 m/s and then d of the car after 4 secon		the forward direction with an	
	$(1)~15~\mathrm{m/s}$	$(2)~25~\mathrm{m/s}$	(3) 18 m/s	$(4)~7.5~\mathrm{m/s}$	(5) 36 m/s	
6.		at an unknown speed su the truck's initial veloc		ecceleration of 5 m/s 2 . In	f the truck leaves a skid mark	
	(1) 17.3 m/s	$(2)~30~\mathrm{m/s}$	$(3)~3.45~\mathrm{m/s}$	(4) 0 m/s	(5) 22 m/s	

Instructor(s): N. Sullivan

			September 24, 2014
	Wildterin Exam		5cptcm5cr 24, 2014
nonor. I have nei	ther given nor received ur		ramination.
NUMBER IS er on your ans ar answer sheet. sheet and sign it where on this ex is to be turned in your intended answers may be ided off. Choos is correct, leave	THE 5-DIGIT NUME wer sheet (use lines 76 DARKEN CIRCLES also. am that you like. Circle n. No credit will be given answer completely, us counted as incorrect. se the closest to exact	EER AT THE TOP OF 80 on the answer shows COMPLETELY. Consider your answers on the without both answer shing a #2 pencil or bl	F EACH PAGE. teet for the 5-digit number). de your UFID number on your tetest form. At the end of the teet and printout. te or black ink. Do not make
- •	$\frac{0 \text{ m/s}^2}{}$ $C - 6.67$	$\times 10^{-11} \text{N.m}^2/\text{kg}^2$	
y = 9.8	$\frac{0 \text{ m/s}}{G} = 0.07$	× 10 N·III / Kg	
the center of to	wn and walks 12 km due	west, and then walks 5 k	am due south. How far is she
at the end of the	walk?		
(2) 17 km	(3) 7.0 km	(4) 25 km	(5) 5.0 km
_	,	· · · · · · · · · · · · · · · · · · ·	os in a distance of 30 m. What $ (5)\ 120\ \mathrm{N} $
		the water below the brid	dge 3 seconds after it is
(2) 17 m	(3) 12 m	(4) 29.4 m	(5) 3.0 m
planet X to that		ation due to gravity on p (4) 4.0	planet X is 4.9 m/s^2 , what is (5) 1.0
eling with a const	tant speed of 5 m/s. A dr	ives past car B which is	at rest. At the moment A
			(5) 7.5 s
\ /	(-,	() -3 -2	(-)
magnitude of the	e force used to drag the n	nass?	the friction exerted by the ice (5) 35 N
	NUMBER IS er on your ans ar answer sheet. sheet and sign it where on this ex is to be turned in your intended answers may be needed off. Choose the separately. $g = 9.8$ It the center of to the the end of the (2) 17 km is traveling at 12 erted by the tires (2) 2.2 N is dropped from the bridge above the (2) 17 m the same size as planet X to that (2) 2.0 eling with a constant at (2) 5.0 s is dragged across	Midterm Exam nonor, I have neither given nor received units of the planet X to that of the Earth? (2) 2.2 N (3) 12 N is dropped from a bridge. The stone hits exit be bridge above the water? (2) 17 m (3) 12 m is dropped from a bridge. The stone hits exit be bridge above the water? (2) 17 m (3) 12 m is dropped from a bridge. The stone hits exit bridge above the water? (2) 17 m (3) 12 m the same size as the Earth. If the acceleration of 5 m/s. A drivith a constant speed of 5 m/s. A drivith a constant acceleration of 5 m/s². How (2) 5.0 s is dragged across an icy pond with an acceleration of the force used to drag the magnitude of the force used to drag	where on this exam that you like. Circle your answers on the is to be turned in. No credit will be given without both answer shy your intended answer completely, using a #2 pencil or ble answers may be counted as incorrect. Indeed off. Choose the closest to exact. There is no penalty is correct, leave the form blank. $g = 9.80 \text{ m/s}^2 \qquad G = 6.67 \times 10^{-11} \text{ N} \cdot \text{m}^2/\text{kg}^2$ It the center of town and walks 12 km due west, and then walks 5 km at the end of the walk? (2) 17 km (3) 7.0 km (4) 25 km (3) 12 N (4) 44 N is traveling at 12 m/s. If the driver applies the brakes, the car stoperted by the tires when the car is braking? (2) 2.2 N (3) 12 N (4) 44 N is dropped from a bridge. The stone hits the water below the bridge above the water? (2) 17 m (3) 12 m (4) 29.4 m the same size as the Earth. If the acceleration due to gravity on planet X to that of the Earth? (2) 2.0 (3) 0.25 (4) 4.0 elling with a constant speed of 5 m/s. A drives past car B which is with a constant acceleration of 5 m/s². How long does it take B to (2) 5.0 s (3) 0.5 s (4) 1.0 s

(1) 12 m

 $(1) 3.3 \text{ m/s}^2$

(2) 0 m

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

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

Instructor(s): N.	Sullivan			
PHY 2004		PHYSICS DEPARTM Midterm Exam		September 1 = 13
Name (print, last	first):		Signature:	· ·
	On my honor, I have neith		authorized aid on this e	examination.
 Code your to Code your nature answer sheet. Print your nature (3) Do all scratch test, this example (4) Blacken the make any strates (5) The answer believe that 	ame on your answer sheet. It is ame on this sheet and sign it is work anywhere on this examprintout is to be turned in the circle of your intended any marks or some answers meanswers in the circle of your intended any marks or some answers in the circle of your intended any marks or some answers in the circle of your intended any marks or some answers in the circle of your intended and your intended and the circle of your intended and your intended	rer sheet (use lines 76-DARKEN CIRCLES also. In that you like. Circle In No credit will be given answer completely, hay be counted as incorre ose the closest to ex	-80 on the answer she COMPLETELY. Con your answers on the n without both answer using a #2 pencil or 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
		$g = 9.80 \text{ m/s}^2$		
	ancy sets out on a drive. Sh starting point?	e drives 8 km east and t	hen 15 km north. At t	the end of her drive, how far is
(1) 17 km	$(2)~23~\mathrm{km}$	(3) 16 km	(4) 7 km	(5) 30 km
2. (3 points) A s	stone is dropped from a brid the water?	ge. its the water 2	seconds after it is drop	pped. What is the height of the
(1) 19.6 m	(2) 39.2 m	(3) 27.6 m	(4) 9.8 m	(5) 4.9 m
3. (4 points) A surface is 0.60	block of mass 10 kg sits on 0. A what angle (in degrees)	an inclined plane. The omust the block be raise	coefficient of static fricted before it begins to sli	tion between the block and the ide?
(1) 31°	$(2) 75^{\circ}$	$(3) \ 42^{\circ}$	$(4) 25^{\circ}$	(5) 62°

4. (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/s². What is its net displacement after 4 s of acceleration?

5. (5 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. She performs the same experiment on planet X, and finds that the dart gun shoots the dart a maximum distance of

 $(4) \ 3 \ m$

(3) 9.8 m/s^2 (4) 4.9 m/s^2 (5) 27.4 m/s^2

(5) 9 m

(3) 6 m

Instructor(s): N. Sullivar

РН	Y 2004		PHYSICS DEPART: Midterm Exam		September 19, 2011	
Name (print, last first):		t):				
		n my honor, I have neith			xamination.	
(2) (3) (4) (5)	Code your test Code your name answer sheet. Print your name Do all scratch we test, this exam p Blacken the ci make any stray n The answers a believe that no	on your answer sheet. It on this sheet and sign it ork anywhere on this exactint out is to be turned it rele of your intended marks or some answers in	ver sheet (use lines 76 DARKEN CIRCLES also. In that you like. Circle n. No credit will be give answer completely, hay be counted as incorose the closest to exect, leave the form be	6-80 on the answer shall COMPLETELY. Consequence your answers on the en without both answer using a #2 pencil or rect. Exact. There is no perblank.	eet for the 5-digit number). de your UFID number on your e test form. At the end of the sheet and printout. r blue or black ink. Do not enalty for guessing. If you	
			$g = 9.80 \text{ m/s}^2$			
1.	(4 points) A ball	is thrown up vertically	at 20 m/s. How high w	ill 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 s	ets out on a walk. She v	valks 8 km east and the	n 15 km north. How far	is she from her starting point?	
	$(1)~17~\mathrm{km}$	(2) 23 km	(3) 16 km	(4) 7 km	(5) 30 km	
3.	(4 points) A stone is dropped from a bridge. It hits the water 2 seconds after it is dropped. What is the height of the bridge above the water?					
	(1) 19.6 m	(2) 39.2 m	(3) 27.6 m	(4) 4.9 m	(5) 9.8 m	
4.	(4 points) A block of mass 10 kg sits on an inclined plane. The coefficient of static friction between the block and the surface is 0.60. At what angle (in degrees) must the block be raised before it begins to slide?					
	(1) 31°	(2) 75°	$(3) 42^{\circ}$	$(4) 25^{\circ}$	(5) 62°	
5.	. (5 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	
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/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) 400 m	(2) 500 m	(3) 200 m	(4) 100 m	(5) 200 m	
7.	shoot a dart a m He performs the	aximum horizontal dista	nce of 30 m before the onet X, and finds that the	dart returns to the same he dart gun shoots the d	arth his powerful dart gun will height from which it was shot. lart a maximum distance of 60	

(1) 4.9 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

(1) 3.27 m/s^2

	Y 2004	van	PHYSICS DEPARTM Midterm Exam		Contember 10, 2012	
		:		Signature:	September 19, 2012	
ran.	,-		her given nor received un			
		,				
(1)	Code your test r Code your name o	number on your ansv	THE 5-DIGIT NUMB wer sheet (use lines 76 DARKEN CIRCLES	-80 on the answer sh	of EACH PAGE. neet for the 5-digit number). de your UFID number on your	
(2)	answer sheet. Print your name of the polynomial screetch work	on this sheet and sign i	t also.	vour answers on th	e test form. At the end of the	
	test, this exam pri Blacken the circ	intout is to be turned in cle of your intended	in. No credit will be give l answer completely,	n without both answer using a #2 pencil o	sheet and printout. or blue or black ink. Do not	
(5)			nay be counted as incorr		enalty for guessing. If you	
. ,	believe that no	listed answer is corr	rect, leave the form b		enanty for guessing. If you	
(6)	Hand in the answe	er sheet separately.				
			$g = 9.80 \text{ m/s}^2$			
1.	(3 points) A cyclis	st travels 8 km east and	d then 15 km north. How	w far is she from her sta	arting point?	
	$(1)~17~\mathrm{km}$	(2) 23 km	(3) 15 km	(4) 5 km	(5) 0 km	
2.	(4 points) A pebb?	le is dropped from the	top of a water well. If the	ne pebble takes 2 second	ds to hit the water, how deep is	
	(1) 19.6 m	$(2)~9.8~\mathrm{m}$	(3) 39.2 m	(4) 0 m	(5) 4.9 m	
3.			stant speed of 10 m/s. A ation of 10 m/s ² . How lo		is at rest. As soon as A passes tch 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	$(3)~10.0~\mathrm{m}$	(4) 8.5 m	(5) 2.5 m	
5.	the surface of the	moon the acceleration	full gear can jump a hori due to gravity is 1/6 the e equipment and same e	of the value on earth. I	on the surface of the earth. On How far can the astronaut jump	
	(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	g car is traveling at 12 n	n/s. If the driver hits the	brakes and the car skids	to a stop in 10 m, what is the	
	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.			on in the sketch, M_2 is 10 of the acceleration of the		M_1	

(2) 6.54 m/s^2 (3) 13.1 m/s^2 (4) 0 m/s^2 (5) 1.63 m/s^2

77777 Instructor(s): N. Sulli			
DHV 2004		DEPARTMENT	Santambar 22, 2010
PHY 2004 Name (print last first):	Exam 1	natura	September 22, 2010
Name (print, last first): On my honor, I ho	Sig we neither given nor re	eceived unauthorized	aid on this examination.
YOUR TEST NUM (1) Code your test number of number).			E TOP OF EACH PAGE. answer sheet for the 5-digit
· · · · · · · · · · · · · · · · · · ·		EN CIRCLES COM	PLETELY. Code your UFID
(2) Print your name on this			
			r answers on the test form. At the be given without both answer sheet
(4) Blacken the circle of you			encil or blue or black ink. Do not
make any stray marks of			
(5) The answers are rounded(6) Hand in the answer shee		st to exact. There is n	o penalty for guessing.
	g = 0	9:80 m/s ²	
The first answer given on the	his template are the co	rrect answers.	
1. A ball is thrown up vertic (1) 20.4 m (2)	eally at 20 m/s. How his 40.8 m (3) 5.1 m		m
2. Jane sets out on a walk. S point?	he walks 5 km east and	l then 12 km north. H	low far is she from her starting
	17 km (3) 7 km (4)	12 km	(5) 5 km
3. A stone is dropped from a the bridge above the water		er 3 seconds after it is	s dropped. What is the height of
(1) 44.1 m (2)	22 m (3) 10.5 m	n (4) 66 m	(5) 5.5 m
			atic friction between the block and ed before it begins to slide?
	53 ° (3) 89 °	(4) 5 °	(5) 45 °
5. An automobile is initially accelerating in the forwa other words, if $XI = 0$, where $XI = 0$ are $XI = 0$.	rd direction at 4 m/s ² . V	What is its net displac	0 the automobile begins cement 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 the	ne 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

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

Instructor(s): N. Sullivan

PHY 2004		PHYSICS DEPARTA Midterm Exam		February 1, 2012
Name (print, last first):			Signature:	
Or	n 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 we test, this exam p Blacken the ci make any stray r The answers as 	on this sheet and sign it ork anywhere on this exactintout is to be turned in rcle of your intended marks or some answers mare rounded off. Chool isted 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 m	(3) 0.51 m	(4) 40.8 m	(5) 7.10 m
2. (3 points) Jane s	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?
$(1)~8.5~\mathrm{km}$	(2) 23 km	(3) 17.1 km	(4) 3 km	(5) 30 km
3. (3 points) A stor bridge above the		dge. It hits the water 1.5	seconds after it is drop	oped. What is the height of the
(1) 11.0 m	(2) 39.2 m	(3) 19.6 m	(4) 5.5 m	(5) 1.10 m
		an inclined plane. The es) must the block be rai		tion between the block and the slide?
$(1) \ 27^\circ$	(2) 75°	(3) 47°	(4) 15°	(5) 67°
		king up at a speed of 5 r t is its net displacement		automobile begins accelerating?
(1) 12 m	(2) 0 m	(3) 6 m	(4) 3 m	(5) 9 m
this moment the	car begins to accelerate	20 m/s. A car traveling in the forward direction at far does the cruiser travelength.	at a rate of 2 m/s^2 , and	t 30 m/s passes the cruiser. At the cruiser begins to accelerate to the car?
(1) 400 m	(2) 27.9 m	(3) 100 m	(4) 15.7 m	(5) 175 m
shoot a dart a m She performs the	aximum horizontal dista e 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

