

Physics Phlshcards The Basics

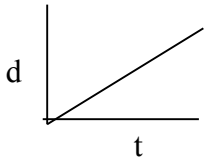
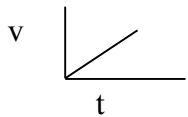
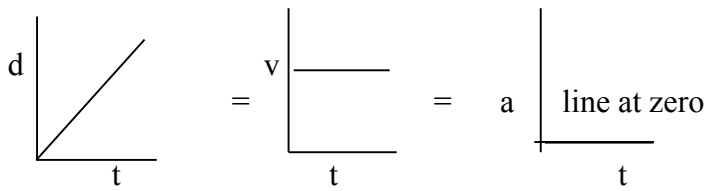
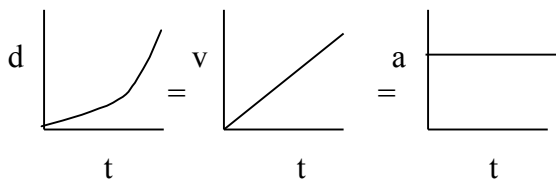
Series #	Topic	Number of Cards
0	Math and Measuring	10
1	Kinematics	36
2	Statics	18
3	Dynamics	12
4	Friction	14
5	Impulse and Momentum	10
6	Gravity	6
7	Work and Power	8
8	Energy	12
9	Motion in Two Dimensions	14
10	Electrostatics	16
11	Current Electricity	24
12	Magnetism	10
13	Wave Phenomena	20
14	Light	14
15	Modern Physics	14
PRT	Physics Reference Table Questions	22

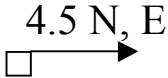
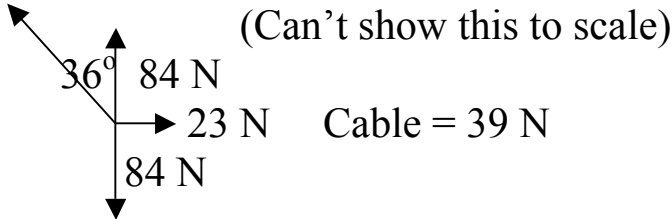
These 250 phlshcards cover the basic concepts of the New York State Physical Setting: Physics Regents Core Guide. The underlined cards are word problems. The answer key has the core reference for each question. Most are on p16 & 17, the Standard 4 concepts, with some from p12 & 13, the process skills associated with Standard 4. Significant figures are used throughout the answer key, with a few exceptions. There are 22 cards at the end for extra Reference Table practice. This has been through just one revision, and it is possible there still are some undetected errors. I hope they do help your students with reinforcement and review for the Regents Physics course. Have phun!

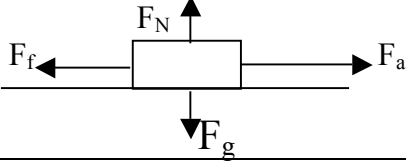
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Physics Flashcards Answer Key

Card #	Core Guide Reference	Answer		
0-1	Proc Skills Intro	Kilogram kg		
0-2	Proc Skills Intro	Meter m		
0-3	Proc Skills Intro	Second s		
0-4	Proc. Skills Intro	Variable	Symbol	Unit
		Mass	m	kg
		Distance	d	m
		Time	t	s
		Velocity	v	m/s
		Acceleration	a	m/s ²
		Force	F	N
0-5	St 1- S3.2	Significant figures or digits		
0-6	St 1- S3.2	0.45=2 9004.7=5 0.01=1 607=3 130=2 130.=3		
0-7	St 1- M1.1	15000 m or 1.5 x 10 ⁴ m 3.9 kg/m		
0-8	St 1- S3.2	2 4		
0-9	St 1 M1.1	5.5 x 10 ²⁰ m ² 5 x 10 ⁵ kgm		
0-10	St 1 M1.1	3.3 x 10 ¹⁸ kgm/s ²		
1-1	St 4 5.1a	Distance (scalar) is the total, displacement (vector) is direct from start to finish		
1-2	St 4 5.1a	8m 4m, E		
1-3	St 4 5.1a	11m 8m, 40° S of E		
1-4	St 4 5.1a	Speed is how fast (scalar), and velocity is how fast and in what direction (vector)		
1-5	St 4 5.1d	19 m/s		
1-6	St 4 5.1d	18 m/s, North		
1-7	St4 5.1d	30. m/s		
1-8	St 4 5.1d	450 m		
1-9	St 4 5.1d	4 m/s ²		
1-10	St 4 5.1d	4.7 m/s		
1-11	St 4 5.1d	110 m		
1-12	St 4 5.1d	1.4 m/s ²		

1-13	St 4 5.1d	21 m/s
1-14	St 4 5.1d	3.1 m/s ²
1-15	St 4 5.1d	140 m
1-16	St4 5.1d	-
1-17	St 4 5.1d	26 m/s
1-18	St 4 5.1d	39 m/s
1-19	St 4 5.1ii	Velocity
1-20	St 4 5.1ii	Acceleration
1-21	St 4 5.1ii	Displacement
1-22	St 4 5.1i	
1-23	St 4 5.1i	
1-24	St 4 5.1i	
1-25	St 4 5.1i	
1-26	St 4 5.1d	17 m/s
1-27	St 4 5.1d	35 m
1-28	St 4 5.1d	30. m/s
1-29	St 4 5.1e	9.81 m/s ² g
1-30	St 4 5.1e	2.4 s
1-31	St 4 5.1e	23 m/s
1-32	St 4 5.1e	63 m/s
1-33	St 4 5.1e	68 m/s

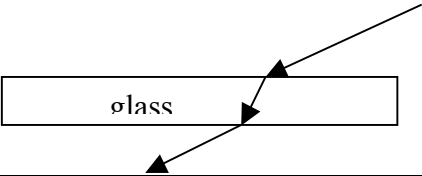
1-34	St 4 5.1a	Vector
1-35	St 4 5.1g	1.7 s
1-36	St 4 5.1e&g	170 m
2-1	St 4 5.1j	Statics
2-2	St 4 5.1k	Newton 1 1
2-3	St 4 5.1a	Vectors
2-4	St 4 5.1v	
2-5	St 4 5.1j	Concurrent
2-6	St 4 5.1 c&j	Resultant
2-7	St 4 5.1c&j	180° 0°
2-8	St 4 5.1c&j	7.1 N 2.5 N
2-9	St 4 5.1c&v	Head to tail Pythagorean Theorem
2-10	St 4 5.1c&j	9.5 N, 55° N of W
2-11	St 4 5.1c&v	32 N, 35° S of E
2-12	St 4 5.1b	Resolved Component
2-13	St 4 5.1b&vi	X= 13.4 N Y=10.1N
2-14	St 4 5.1j	Equilibrant
2-15	St 4 5.1j,iv&v	
2-16	St 4 5.1 j, iv,v&vi	Parallel= 12 N Perpendicular= 19 N
2-17	St 4 5.1j,iv&v	The tension on each will equal the weight of the object
2-18	St 4 5.1b&vi	Horiz= 16 N Vert=18 N
3-1	St 4 5.1i	Motion Inertia
3-2	St 4 5.1i,j,k	Rest Constant Velocity Acceleration
3-3	St 4 5.1k	0.8 m/s^2
3-4	St 4 5.1k	790 N
3-5	St 4 5.1k	The force required to accelerate a 1 kg mass at 1 m/s^2
3-6	St 4 5.1q	100 N upwards

3-7	St 4 5.1l	Mass=amount of matter weight=gravity's affect on that matter Mass stays the same, weight changes
3-8	St 4 5.1l	181 N 3.5 kg
3-9	St 4 5.1k	24 kg
3-10	St 4 5.1e&k	Different The Same
3-11	St 4 5.1a&l	Vector, Scalar, Vector
3-12	St 4 5.1l	4 m/s^2
4-1	St 4 5.1o	Static (Starting)=greater Sliding (Kinetic)=less
4-2	St 4 5.1q	A force acting perpendicular to the surface or opposite to the weight.
4-3	St 4 5.1q	Equal in magnitude, opposite in direction
4-4	St 4 5.1o	Opposite in direction
4-5	St 4 5.1o	
4-6	St 4 5.1o	Less, equal to, greater
4-7	St 4 5.1o	The relationship between the frictional and normal forces μ
4-8	St 4 5.1d,i,o	6.2 N
4-9	St 4 5.1o	$F_f = \mu F_N$
4-10	St 4 5.1o	3.7 N
4-11	St 4 5.1k	1.3 N
4-12	St 4 5.1k	0.80 m/s^2
4-13	St 4 5.1j	Parallel
4-14	St 4 5.1j	16 N
5-1	St 4 5.1p	p kgm/s a vector quantity that factors in the mass and velocity of an object
5-2	St 4 5.1p	83 kgm/s
5-3	St 4 5.1r	1.5 m/s
5-4	St 4 5.1p	J Ns The change in momentum of an object due to a force applied over time.
5-5	St 4 5.1p	50 Ns
5-6	St 4 5.1p	6 m/s
5-7	St 4 5.1r	Equal in magnitude, but opposite in direction
5-8	St 4 5.1r	1 m/s
5-9	St 4 5.1q&r	0.47 m/s
5-10	St 4 5.1r	They'll both stop because their momentums were equal

6-1	St 4 5.1t&u	$6.67 \times 10^{-11} \text{ Nm}^2/\text{kg}^2$ G
6-2	St 4 5.1t&u	The greater the mass, the proportionally greater the gravitational force (ex. double one mass, double the force)
6-3	St 4 5.1t&u	It changes with the square of the distance (ex. double the distance, quarter the force)
6-4	St 4 5.1t&u	Still X
6-5	St 4 5.1u	$3.7 \times 10^{-10} \text{ N}$
6-6	St 4 5.1u	Twice One-fourth
7-1	St 4 4.1g	W Joule (J) Energy exchanged for movement
7-2	St 4 4.1i	P Watt (W) Rate at which work is done
7-3	St 4 4.1j	1 N force moving an object 1 m 1 Joule of work done in 1 s
7-4	St 4 4.1i	More
7-5	St 4 4.1g	420 J
7-6	St 4 4.1g	320 J
7-7	St 4 4.1i	68 W
7-8	St 4 4.1g	None
8-1	St 4 4.1c&d	Potential= energy of position or condition Kinetic=energy of motion PE types= gravitational, chemical, elastic Joules
8-2	St 4 4.1c	3740 J
8-3	St 4 4.1d	250 J
8-4	St 4 4.1e	Equals At the top of its swing, a pendulum's energy is all PE, and as it swings, the PE converts to KE as it speeds up, until at the bottom of the swing, it's all KE
8-5	St 4 4.1e&f	Mechanical Internal Q
8-6	St 4 4.1f	Cons=Path doesn't matter Non= path matters
8-7	St 4 4.1c&d	930 J 930 J
8-8	St 4 4.1c&d	11 m/s
8-9	St 4 5.1m	Energy stored in a stretched spring or other elastic material k=describes how easily a spring is stretched
8-10	St 4 5.1m	2 N/m
8-11	St 4 5.1m	5 N/m
8-12	St 4 5.1m,4.1c	0.13 J
9-1	St 4 5.1b	23 m/s

9-2	St 4 5.1b	8.8 m/s
9-3	St 4 5.1 f&g	0.90 s
9-4	St 4 5.1f,g,h	1.80 s 41 m
9-5	St 4 5.1f&g	4.0 m
9-6	St 4 5.1f&h	Both will hit at the same time
9-7	St 4 5.1f&h	4.9 s
9-8	St 4 5.1f&h	110 m
9-9	St 4 5.1n	40. m
9-10	St 4 5.1n	The force that, when combined with inertia, keeps objects moving in curved paths
9-11	St 4 5.1n	F_c Tangent to the circle
9-12	St 4 5.1n	Towards the center Inertia
9-13	St 4 5.1n	0.34 m/s^2
9-14	St 4 5.1n	360 N
10-1	St 4 5.3b	Ion Equal to
10-2	St 4 5.3b	+ - elementary
10-3	St 4 5.3b	1.6×10^{-19} 6.25×10^{18}
10-4	St 4 5.1s&t	Friction Repel Attract Attract
10-5	St 4 5.1s&t	The leaves will repel because they are both charged neg. due to the electrons being repelled by the rod and migrating down the electroscope.
10-6	St 4 5.1s&t	Induction
10-7	St 4 4.1j	Ground Earth Electrons will move from the object to the ground
10-8	St 4 4.1j	Total charge of a system stays the same -2C
10-9	St 4 5.3b	2.1×10^{-3}
10-10	St 4 5.1u	1/9 of what it was
10-11	St 4 5.1u	$7.3 \times 10^6 \text{ N}$
10-12	St 4 5.1s	+
10-13	St 4 5.1s	In each case, they'll move away from the + and towards the negative
10-14	St 4 5.1s	$5.0 \times 10^{-3} \text{ N/C}$
10-15	St 4 5.1s,4.1g	Potential Difference
10-16	St 4 4.1k	Volt V electronvolt eV
11-1	St 4 4.1n	Ampere Circle with an A in it ammeter series
11-2	St 4 4.1n	20A

11-3	St 4 4.1n	Potential Difference voltage voltmeter parallel
11-4	St 4 4.1o	Please see reference tables
11-5	St 4 4.1m	Conductors insulators
11-6	St 4 4.1m	Resistance ohms Ω
11-7	St 4 4.1l	10.A
11-8	St 4 4.1m	Decreases, increases, decreases, resistivity
11-9	St 4 4.1m	0.016 Ω
11-10	St 4 4.1o	Please see reference tables for symbols
11-11	St 4 4.1o	120 Ω
11-12	St 4 4.1l	0.10 A
11-13	St 4.4.1l&o	5 V
11-14	St 4 4.1l&o	Please see reference tables for symbols
11-15	St 4 4.1l&o	29 Ω
11-16	St 4 4.1l&o	0.41 A
11-17	St 4 4.1l&o	0.24 A
11-18	St 4 4.1l&o	Less
11-19	St 4 4.1p	Watt, W, Volts, Amps
11-20	St 4 4.1p	1200 W
11-21	St 4 4.1p	Power Time Joule
11-22	St 4 4.1p	12,000 J
11-23	St 4 4.1n	5A
11-24	St 4 4.1o	Less
12-1	St 4 4.1j&k	Magnetic, North, South, Charged object, Motion
12-2	St 4 4.1k,5.1t	Repel, Attract. South
12-3	St 4 4.1j	Field Intensity Flux
12-4	St 4 4.1j	North to South
12-5	St 4 4.1j	Lines go from North to South
12-6	St 4 4.1j	Lines go from North to South
12-7	St 4 4.1j	Lines go from North to South
12-8	St 4 4.1j	Lines go from North to South
12-9	St 4 4.1k	Potential Difference Current
12-10	St 4 4.1k	Greater
13-1	St 4 4.3a	Wave: sound, light, ocean, earthquake
13-2	St 4 4.3b	Pulse (reflected pulse is inverted)
13-3	St 4 4.3e	Vibrates the same direction as it travels. Ex: P-waves, sound

13-4	St 4 4.3e	Vibrates perpendicular to the direction of travel, ex: light, S-waves
13-5	St 4 4.3c	Drawn wave should show three wavelengths ending at 4,8,12, and be 1 m above and below axis
13-6	St 4 4.3c	2 Hz
13-7	St 4 4.3c	Hz cps period s
13-8	St 4 4.3c	0.01 s
13-9	St 4 4.3c	Crest trough
13-10	St 4 4.3c	230 m/s
13-11	St 4 4.3c	f λ decrease
13-12	St 4 4.3b&c	Front energy
13-13	St 4 4.3n	Lower Doppler Effect
13-14	St 4 4.3n	Red Away from
13-15	St 4 4.3m	Higher constructive
13-16	St 4 4.3m	Less destructive
13-17	St 4 4.3m	Nodes odd antinodes even
13-18	St 4 4.3f&m	Standing wave resonance (guitar string, loud note when singing in shower, Tacoma Narrows bridge, etc)
13-19	St 4 4.3l	Diffraction
13-20	St 4 4.3l	Should show concentric circular wave fronts
14-1	St 4 4.3k	3.00×10^8 m/s c
14-2	St 4 4.3c	6.7×10^{14} Hz
14-3	St 4 4.3h	The incident ray is the left one, the reflected ray is the right one, the Normal should be drawn where the incident ray hits the surface, and the angles shown between the rays and the Normal.
14-4	St 4 4.3h	They're equal
14-5	St 4 4.3h	Regular Irregular (diffuse) Virtual
14-6	St 4 4.3h&I	Refraction
14-7	St 4 4.3i	Absolute Index of Refraction n
14-8	St 4 4.3i&j	Towards Away From
14-9	St 4 4.3i&j	
14-10	St 4 4.3j	1.3
14-11	St 4 4.3j	10^0

14-12	St 4 4.3j	A is more dense
14-13	St 4 4.3g&k	Electromagnetic Spectrum
14-14	St 4 4.3g&k	$5.03 \rightarrow 5.20 \times 10^{14}$ Hz
15-1	St 4 4.3g,5.3e	Diffraction, Interference, Polarization
15-2	St 4 5.3e	Photoelectric Effect
15-3	St 4 5.3c	Light hitting photoemissive materials will eject electrons if the frequency is high enough
15-4	St 4 5.3a,b,c	Photons frequency h 6.63×10^{-34} Js
15-5	St 4 5.3e	Particles
15-6	St 4 5.3c	Energy levels ground state light
15-7	St 4 5.3d	6.9×10^{14} Hz= violet
15-8	St 4 5.3c&d	Spectra Bright Line Spectra
15-9	St 4 5.3g	Nucleons
15-10	St 4 5.3f	2.1×10^{17} J
15-11	St 4 5.1 intro 5.3i	Strong, electromagnetic, weak (or electroweak), and gravity
15-12	St 4 5.3g	Quark up,down,charm,strange, top, bottom, +/- 1/3 & +/- 2/3
15-13	St 4 5.3g	Antiquarks
15-14	St 4 5.3g	Hadron quarks electron
PRT-1	P1	Electrostatic Constant 8.99×10^9 Nm ² /C ²
PRT-2	P1	3.31×10^2 m/s 3.31×10^5 mm/s 3.31×10^{14} pm/s
PRT-3	P1	1.67×10^{-27} kg 1.67×10^{-18}
PRT-4	P1	Multiply by 10^{18}
PRT-5	P1	9.81 m/s ²
PRT-6	P1	.53 copper and steel
PRT-7	P2	10^0 to 10^1 m
PRT-8	P2	u-v
PRT-9	P2	Glycerol diamond
PRT-10	P4	Current voltage
PRT-11	P4	Electric field strength
PRT-12	P4	Silver
PRT-13	P4	
PRT-14	P5	Period
PRT-15	P5	Energy drops

PRT-16	P5	The eV 1.6×10^{-19} J Planck's Constant
PRT-17	P4	Divide by two, then square it and multiply by Pi
PRT-18	P6	Multiplying the sine of the angle by the initial velocity
PRT-19	P6	$V_f^2 = V_i^2 + 2ad$
PRT-20	P6	equals
PRT-21	P6	Impulse time
PRT-22	P6	Internal energy