

The University of the State of New York

REGENTS HIGH SCHOOL EXAMINATION

PHYSICAL SETTING
PHYSICS

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ANSWER SHEET

Student Kinematics Key Sex: Male Female Grade
Teacher School

Record your answers to Part A and Part B-1 on this answer sheet.

Part A	
1 2	13 1
2 4	14 3
3 3	15 4
4 3	16 1
5 1	17 3
6 2	18 4
7 1	19 2
8 4	20 2
9 1	21 1
10 4	22 2
11 1	
12 2	

Part B-1
23 4
24 1

Part A Score

Part B-1 Score

Write your answers to Part B-2 and Part C in your answer booklet.

The declaration below should be signed when you have completed the examination.

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

Signature

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PHYSICAL SETTING PHYSICS

ANSWER BOOKLET

Student Sex: Male Female
Teacher
School Grade

Part	Maximum Score	Student's Score
A	22	
B-1	2	
B-2	9	
C	5	
Total Written Test Score (Maximum Raw Score: 38)		<input type="text"/>
Final Score (From Conversion Chart)		<input type="text"/>
Raters' Initials:		
Rater 1		Rater 2

Answer all questions in Part B-2 and Part C. Record your answers in this booklet.

Part B-2

25-26

G
 $v_i = 13 \frac{m}{s}$
 $v_f = 25 \frac{m}{s}$
 $t = 5s$

$v_f = v_i + at$ OR $a = \frac{\Delta v}{t}$
 $a = \frac{v_f - v_i}{t}$
 $a = \frac{25 \frac{m}{s} - 13 \frac{m}{s}}{5s} = 12 \frac{m}{s^2}$
 $a = 2.4 \frac{m}{s^2}$

28 15 m/s
 $a = \text{slope} = \frac{\Delta v}{t} = \frac{15 \frac{m}{s}}{6s}$

39 2.5 m/s²

30 displacement

31 1.25 m/s²
 $a = \text{slope} = \frac{\Delta v}{t} = \frac{10 \frac{m}{s}}{8s}$

32-33 (3 ways to solve)
 1) Area under graph:
 $A_1 = A_{\square} = b \cdot h = (4s)(5 \frac{m}{s}) = 20m$
 $A_2 = A_{\triangle} = \frac{1}{2} b \cdot h = \frac{1}{2} (4s)(5 \frac{m}{s}) = 10m$
 $d = A = A_1 + A_2 = 20m + 10m$ | $d = 30m$

27 19 m/s (2 ways to solve)
 1) $\bar{v} = \text{Avg velocity}$
 $\bar{v} = \frac{v_i + v_f}{2} = \frac{13 \frac{m}{s} + 25 \frac{m}{s}}{2}$
 $\bar{v} = 19 \frac{m}{s}$

2) $d = v_i t + \frac{1}{2} a t^2$
 $d = (13 \frac{m}{s})(5s) + \frac{1}{2} (2.4 \frac{m}{s^2})(5s)^2$
 $d = 95m$
 $\bar{v} = \frac{d}{t} = \frac{95m}{5s}$

$\bar{v} = 19 \frac{m}{s}$

G
 $v_i = 5 \frac{m}{s}$
 $v_f = 10 \frac{m}{s}$
 $t = 4s$
 $a = 1.25 \frac{m}{s^2}$

2) $d = v_i t + \frac{1}{2} a t^2$
 $d = (5 \frac{m}{s})(4s) + \frac{1}{2} (1.25 \frac{m}{s^2})(4s)^2$
 $d = 30m$

3) $v_f^2 = v_i^2 + 2ad$
 $d = \frac{v_f^2 - v_i^2}{2a} = \frac{(10 \frac{m}{s})^2 - (5 \frac{m}{s})^2}{2(1.25 \frac{m}{s^2})}$
 $d = 30m$

Part C

34 10 m/s

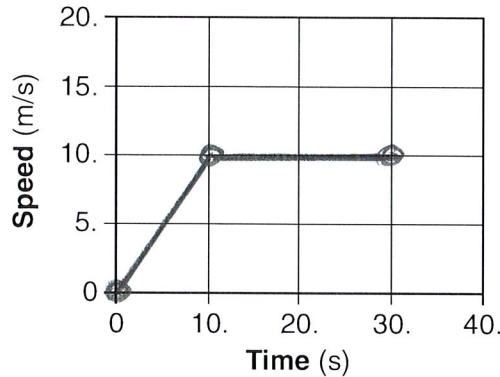
$$v_f = v_i + at$$

$$v_f = (0 \frac{m}{s}) + (1 \frac{m}{s^2})(10s)$$

$$v_f = 10 \frac{m}{s}$$

35-36

Speed vs. Time



37-38 (3 ways to solve)

1) Area under the graph:

$$d = A = A_{\Delta} = \frac{1}{2} b \cdot h = \frac{1}{2} (10s) (10 \frac{m}{s})$$

$$d = 50m$$

$$\frac{v_f}{v_i} = \frac{u}{d}$$

$$v_i = 0 \frac{m}{s}$$

$$v_f = 10 \frac{m}{s}$$

$$a = 1 \frac{m}{s^2}$$

$$t = 10s$$

$$2) d = v_i t + \frac{1}{2} at^2$$

$$d = 0 + \frac{1}{2} (1 \frac{m}{s^2}) (10s)^2$$

$$d = 50m$$

$$3) v_f^2 = v_i^2 + 2ad$$

$$d = \frac{v_f^2 - v_i^2}{2a}$$

$$d = \frac{(10 \frac{m}{s})^2 - (0 \frac{m}{s})^2}{2(1 \frac{m}{s^2})}$$

$$d = 50m$$

