



education

Department of
Education
FREE STATE PROVINCE

PRACTICAL TEST

GRADE 10

PHYSICAL SCIENCES

SEPTEMBER 2018

MARKS: 15

TIME: 30 MINUTES

This paper consists of FIVE pages

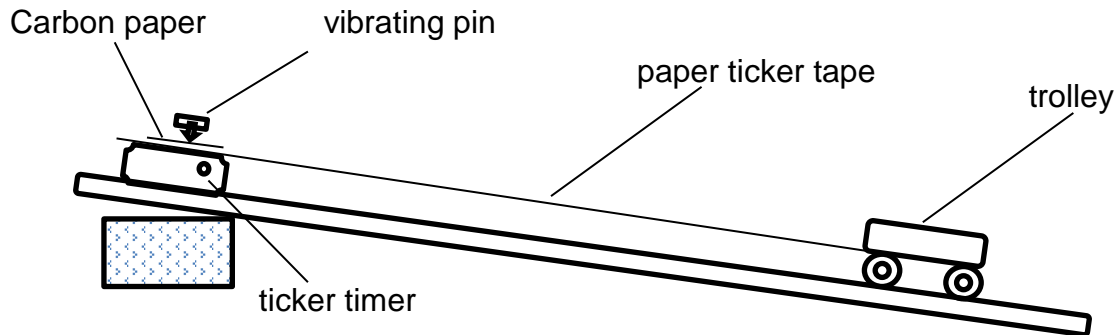
Name of learner:Grade:

INSTRUCTIONS AND INFORMATION

1. Write your name and grade in the appropriate spaces on the FRONT PAGE of this question paper.
2. Answer ALL questions in the space provided in THIS QUESTION PAPER.
3. You may use a non-programmable pocket calculator.
4. You may use appropriate mathematical instruments.
5. Show ALL formulae and substitutions in ALL calculations.
6. Round off your FINAL numerical answers to a minimum of TWO decimal places where applicable.
7. Give brief motivations, discussions, et cetera where required.
8. Write neatly and legibly.

QUESTION 1

An educator demonstrate an experiment to investigate motion of a trolley running down an incline plane. He set up a runway as shown on the sketch below. A piece of carbon paper is attached to the ticker time and the slope of the runway is adjusted before the trolley is let lose.



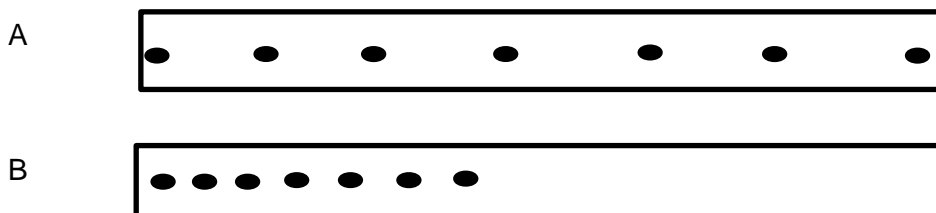
1.1 Why is a piece of carbon paper attached to the ticker timer?

_____ (1)

1.2 Explain why the slope of the runaway is adjusted.

_____ (2)

1.3 One learner picked up TWO pieces of ticker tapes that were thrown into the bin. She wanted to interpret the motion of the trolley using these tapes.



1.3.1 Which of the tapes represents trolley moving with high speed? Write only A or B.

_____ (1)

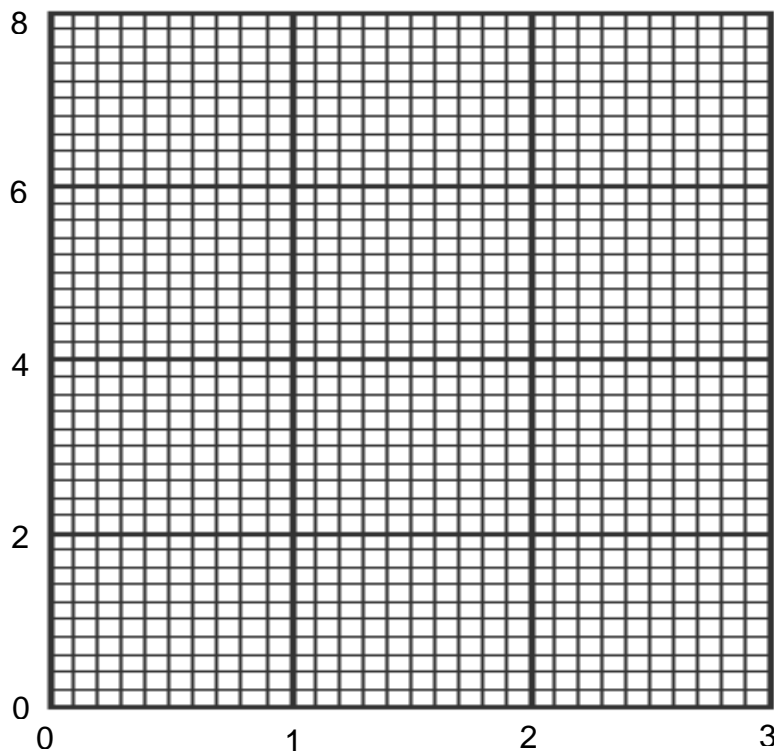
The data was recorded after analysing the change in position in time in one of the ticker tapes. The table below shows data obtained.

Interval	Position (m)	Time(s)
0	0	0
1	0,2	0,6
2	1,7	1,1
3	3,5	1,5
4	5,8	2
5	7,6	2,4

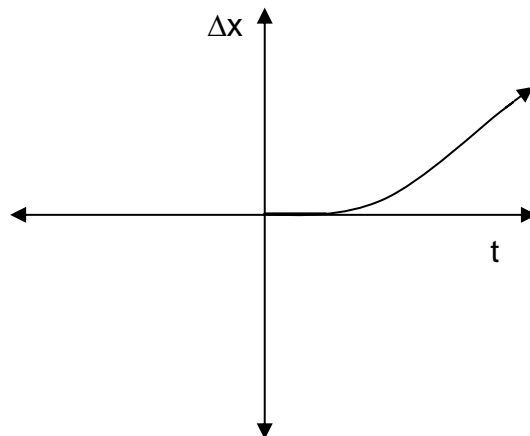
1.4.1 State independent variable: _____ (1)

1.4.2 Draw a suitable Position versus time on the graph paper

Graph of position versus time

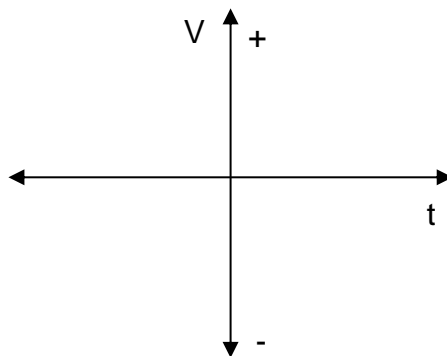


- 1.5 **Position** versus **time** graph where position is increasing at an increasing rate is drawn below. (Not drawn to scale)



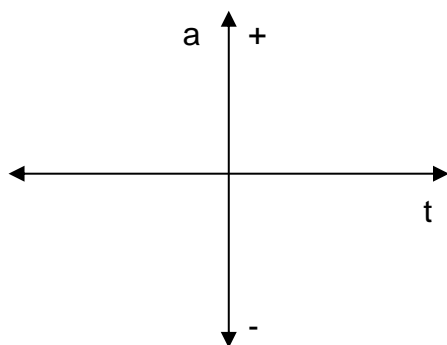
On the set of axes below, draw corresponding **velocity - time** and **acceleration - time** for the graph above. (No values required since the graph is not drawn to scale)

1.5.1



(2)

1.5.2



(2)

- 1.5.3 Is a variable represented by the slope of **Position** versus **time** a scalar or a vector? Support your answer.

(2)

TOTAL: 15