

[illegible]

VARIATION

Total Marks: 20

Duration: 0 hours, 25 minutes

Instructions to test takers

1. Answer all the questions in this paper
2. All the answers for the questions in this paper will be found on **Study Star** (www.studystar.me)
3. Using the answers on the website, mark yourself truthfully and carefully.

Turn this page, time yourself and begin the test

Section A [10 marks]

1. It is given that y varies inversely as the square of x . $x = 2$ when $y = 3$ and $x = 6$ when $y = a$. Calculate the value of the constant, k .

2. Find the value of a in question (1) above.

3. Given that y is proportional to x^3 and $y = 250$ when $x = 10$, write the equation connecting x and y .

4. Write the value of k from question (3) above.

5. Find y when $x = 4$ in question (3) above.

6. It is given that $d = \frac{v}{t-a}$, find d when $v = 10$, $t = 2$ and $a = -4$.

7. Express a in terms of v , t and d in question (6) above.

8. Given that x varies directly as y . Find k if $x = 6$ when $y = 3$.

9. From question (8) above, find y when $x = 12$.

10. From question (8) above find x when $y = -3$.

Section B [10 marks]

11. Given that x varies directly as m and inversely as p . Write an expression connecting these variables with k . [1]

12. If $x = 4$ when $m = 2$ and $p = 1$, find k from question (11) above. [2]

13. Given that y varies directly as $(x^2 + 1)$, find the constant of the variation and write the equation connecting y and x . [3]

14. Given that y varies directly as x and inversely as the square of z , and that $y = 10$ when $x = 32$ and $z = 4$. Find the value of k , the constant. [2]

15. Find y when $x = 20$ and $z = 5$ from question (14) above. [2]



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