



ST. LAWRENCE HIGH SCHOOL



A Jesuit Christian minority Institution

Subject: Mathematics

Class: X

Date:10.07.2021

Worksheet-7

Chapter - Variation

Topic- Direct and Indirect variation

1. Choose the correct alternative. 1x15=15

a) The area of an umbrella varies directly as the square of its radius. If the radius of the umbrella is doubled. Then what is the relationship between the old area and new area? i) new area is 4 times the old one ii) new area is 3 times the old one iii) new area is twice the old one iv) none of these

b) If X is in indirect variation with square of Y and when X is 3, Y is 4. What is the value of X when Y is 2 i) 3 ii) 10 iii) 12 iv) none of these

c) If $x=5$ when $y=10$, $x=25$ when $y=2$ and $x=10$ when $y=5$. What kind of relation x and y share i) direct variation ii) indirect variation iii) equal with each other iv) none of these

d) y is directly proportionate to x^2 and $y=9$ when $x=9$. Now if $y=4$ the value of x is i) 6 ii) -6 iii) ± 6 iv) none of these

e) if

A	25	30	45	250
B	10	12	18	100

What is the variation constant? i) 250 ii) 2.5 iii) 360 iv) none of these

f) what kind of relation we find between A and B from the above table ?

i) $A \propto B$ ii) $A \propto 1/B$ iii) $A \propto \sqrt{B}$ iv) none of these

g)

X	18	8	12	6
Y	3	$27/4$	$9/2$	9

What is the value of variation constant? i) 54 ii) 45 iii) 36 iv) none of these

h) what kind of relationship we find between X and Y from the above table ?

i) $x \propto y$ ii) $x \propto 1/y$ iii) $x \propto \sqrt{y}$ iv) none of these

i) If $a \propto b$ and $b \propto c$ then $a^3 + b^3 + c^3 \propto$ i) $3abc$ ii) $1/3abc$ iii) $6abc$ iv) none of these

j) Few sweets have been distributed among 24 students so that each one will get 5 sweets. If number of students becomes less by 4 then how many sweets each student will get? Solve by the method of variation .

i) 5 ii) 6 iii) 8 iv) none of these

k) y is directly proportional to the square root of x and $y=9$ when $x=9$, Find the value of x when $y=6$ i) 4 ii) 6 iii) 8 iv) None of these

l) If $a \propto b$, $b \propto 1/c$ and $c \propto d$ then find the relationship between a and d i) $a \propto d$ ii) $a \propto 1/d$ iii) $a \propto \sqrt{d}$ iv) none of these

m) Acceleration varies inversely with mass. A force acts on a 2kg object and accelerates it by 12m/second^2 , If the same force applied to another object and it accelerated by 6 m/s^2 . what is the mass of this object?

i) 4 kg ii) 6 kg iii) 5 kg iv) none of these

n) y varies inversely with x and $y=3$ when $x=8$. Find y when $x=6$.i) 5 ii) 6 iii)4 iv) none of these

o) y varies directly with the cube of x and $y=4$ when $x=4$, find y when $x=2$ i) 2 ii) $1/8$ iii) $1/2$ iv) none of these

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