The City School

North Nazimabad Boys Campus

Practice Questions for Mathematics

Class: 9

Topic: Direct And Inverse Proportion

Paper- I

Q1: If the volume 'V' is inversely proportional to the pressure 'P' . Given that V= 200 and P = 50. Find the volume When P = 200.

Q2: If 'z' is inversely proportional to $\sqrt{x}$ and if Z=6 and x = 9.

a) **Express 'z' in terms of $\sqrt{x}$**

b) **Find the value of 'z' when x = 25.**

Q3: If 'x' is directly proportional to $\sqrt[3]{v}$ and x = 4 when v = 64, find the value of x when v = 125 and the value of v when x = 2.

Q4: If y is directly proportional to x^2 and y = 12 when x = 2, find y when x=5.

Q5: It is given that m = $\frac{15}{\sqrt{n}}$:

a) **Describe the relationship between m and n in words by completing the sentence in the answer space.**

m is ……proportional to the square root of n.

b) **Calculate n when m = 3.**

Paper – II

Q6: The surface area 'A' of a sphere is directly proportional to the square of its diameter '*d*', i.e $A = kd^2$

a) **Can you suggest the value of k?**

b) **Given that $A = 38\frac{1}{2}$ when $d = 3\frac{1}{2}$, find the value of k .**

c) **State the relation between A and *d* in another way.**

Q7: When a space satellite orbits the earth , the force F attracting it towards the earth is inversely proportional to the square of the distance R the center of the earth. Express F in terms of R and the constant of the variation k. Hence calculate

a) **The value of k if F= 50 and when R = 32.**

b) **The value of R if F = 512.**

Q8: The pressure P of an enclosed gas, held at a constant temperature is inversely proportional to the volume V of the gas . The pressure of certain mass of the gas is 500 N/m^2 when the volume at a fixed temperature is 2 m^2. Find the pressure when the volume is 5 m^2.

Q9: The frequency of the radio waves is inversely proportional to their wave length. Given that the wavelength is 1.5×10^3 meters when the frequency is 2.0×10^2 kc/s. Find

a) **The frequency of the radio waves with a wave length of 480 meters.**

b) **The wave length of radio waves which have a frequency of 960 kc/s.**