Mathematics (VIII)

Pabna Cadet College

4/1/2021

Answer all the question and upload before 0900 hrs tomorrow (02/04/2021)

1. Mr. Jalal, a fruitseller, buys equal number of watermelons at 2000 taka per 16 pcs and 25 pcs, respectively, and sells all at taka 2000 per 20 pcs.

   a. What are the buying prices of two types of watermelons?
   b. What will be the loss or profit in percentage?
   c. What will be the loss or profit if 2nd type of fruits are sold at 2000 taka per 12 pcs.?

2. If $a^2 - 3a + 1 = 0$

   a. Find the value of $a + \frac{1}{a}$
   b. Prove $a^4 + \frac{1}{a^4} = 47$
   c. Determine $\frac{a^6 + 1}{a^3}$

3. Jayed bought 3 pencils and 2 pens at 60 taka, while Rakib bought 2 pencils and 3 pens at taka 50.

   a. Form two equations, assuming price of pencil x and that of pen y.
   b. Find x and y using substitution method
   c. Find x and y using elimination method