1-What quantity of water should be added to the milk water mixture so that the milk water ratio changes from 2:3 to 4:11. The quantity of milk in the mixture is 40 litres?

Initial quantity of water = (3/2) * Initial quantity of milk

= (3/2) * 40

= 60 liters

The final quantity of milk in the mixture remains 40 liters.

Final quantity of water = (11/4) * Final quantity of milk

= (11/4) * 40

= 110 liters

Quantity of water to be added = 110 - 60

= 50 liters

2-Linear equation 2x+3y=0 meets the x & y-axis at the point?

When the equation intersects the x-axis, the value of y is 0. Substituting y = 0 into the equation:

2x + 3(0) = 0

x = 0

So, the point of intersection with the x-axis is (0, 0).

When the equation intersects the y-axis, the value of x is 0. Substituting x = 0 into the equation:

2(0) + 3y = 0

y = 0

So, the point of intersection with the y-axis is (0, 0).

Therefore, the linear equation 2x + 3y = 0 intersects both the x-axis and y-axis at the point (0, 0).

3-a & b are positive integers such that a^2-b^=19. Find a & b?

a^2 - b^2 = 19➔(a - b)(a + b) = 19.

a-b can be negative or positive, but a+b will always be positive

The factors of 19 are 1 and 19, or -1 and -19, but -1 and -19 can not be true for our equation

Case 1:

$(a - b) = 1$

$(a + b) = 19$

By solving this system, we find $a = 10$ and $b = 9$.

Case 2:

$(a - b) = 19$

$(a + b) = 1$

This equation is not possible for any real values of a and b

Therefore, the solution to the equation $a^2 - b^2 = 19$, with a and b as positive integers, is $a = 10$ and $b = 9$.

5- Sum of two, two-digit numbers is a perfect square. The digits of the first two-digit number are two consecutive positive integers; also, when the digits of the first number are reversed, the second number is formed. Find these numbers & the square root of their sum.

Since first number digits are consecutive positive integers, then the two-digit numbers formed by the consecutive positive integers can be assumed as a and a + 1.

The first two-digit number can be represented as $10a + (a + 1) = 11a + 1$.

The second two-digit number, formed by reversing the digits of the first number, is

$10(a + 1) + a = 11a + 10$.

Given that the sum of these two-digit numbers is a perfect square, we can write the equation as:

$(11a + 1) + (11a + 10) = n^2$,

$22a + 11 = n^2$,

$11(2a + 1) = n^2$.

$11*11=11^2$

Therefore, $2a+1=11$

$a=5$

Thus, the two numbers are 56 and 65, and the square root of their sum is 11.