Linear Equation

Linear equation have 1 unknown quantity and "=" sign in middle.
$3x - 2 = 10$
We can solve this equation to find the value of 'x' and its value will be constant.
$3x - 2 = 10$ (Here something – 2 is 10, means something is 2 bigger than 10 that is 12 so $3x = 12$)
Again, 3 times something is 12, which means $^1/_3$ of 12 is 4 so $x = 4$.
Therefore the unknown quantity is 4.

There is several methods to solve the linear equation.
Finding the value of unknown quantity, we need to get rid of all other terms. When we change place the sign will be changed.

Before	After
+	–
–	+
X	÷
÷	X

Example

$5(x + 2) = 25$ (1st expand the brackets)
$5x + 10 = 25$ (get rid of 10, 10 have + sign, we have to take away from 25)
$5x = 25 - 10$
$5x = 15$ (Again , we need to get rid of 5 . here 5 is in the form of times 'x' .so we have to divide)
$x = 15 \div 5 = 3.$
$x = 3.$

Exercise 17

1) Solve the following equations.

a) $x + 2 = 10$ _____ b) $x - 7 = 13$ _____

c) $p - 4 = 13$ _____ d) $y + 5 = 8$ _____

e) $3x = 27$ _____ f) $5y = 20$ _____

g) $7m = 21$ _____ h) $5x - 7 = 18$ _____

i) $3x - 2 = 10$ _____ j) $4y + 3 = 23$ _____

2) Solve the equations (1st expand then simplify)

a. $5(x - 8) = 40$ b. $7(x+4) = 42$ c. $3(x+5)=12$

d. $3(3x+6) =27$ e. $4(2x - 3) =20$ f. $8 (2x-11) =24$

3) If $x - 3 = 12$, then find the value of

a) $x - 3$ b) $x + 4$ c) $4x$

d) $x \div 5$ e) $x - 15$ f) $2x + 3$

4) If $11 = 6 + p$, and $p + 7 = q + 5$ find the value of q.

=_____

5) Solve the following equations.

a) $2 + 4 + x = 5$ b) $3 + a - 1= 7$ c) $5a + 2 + 3 = 15$

d) $y + 5 - 2 = 14$ e) $x + 2 + x = 8$ f) $-a + 2 + 3 = 15$

Word problems.(Make equation and solve)

6) Peter thinks a number, adds 5, multiply the result by 4 to get 32. What is the number he thought of?

7) I think a number, divide it by 4, take away 7 from it, the answer is 7. Find the number.

8) Sam thought a number, divided it by 3, added 5 to it, the answer is 8. Find the number:

9). Peter thought a number, divided it by 6, took away 9 from it, the answer is 9. Find the number

10) Sam thought a number, added 11, the answer is 15. Find the number.