

Name: _____

Addition with Pronumerals

In arithmetic, we say $10 + 5 = 15$. Thus if I buy 10 black pens and 5 red pens, the total number of pens is 15. But if I buy x black pens and y red pens instead, we could only say that the total number of pens is $x + y$. We can see:

- In arithmetic, $10 + 5 = 15$
- In algebra, the sum of x and y is $x + y$
- Note that in addition, the order does not matter. We say that addition is commutative. That is $10 + 5 = 5 + 10$ and so $x + y = y + x$

Note: It is customary to write answers in alphabetical order. For instance, the sum of b , a and c is $a + b + c$ and not $b + a + c$

1. Complete the table below.

Black pens	Red pens	Total
12	8	
x	6	
b	12	
32	y	
m	n	
p	9	

2. Write down the sums of the following.

- (a) a and $b =$ _____ (b) m and $n =$ _____ (c) p and $q =$ _____
- (d) 15 and 8 = _____ (e) 3 and $a =$ _____ (f) g and 20 = _____
- (g) f and $x =$ _____ (h) 16 and $c =$ _____ (i) 7 and $n =$ _____
- (j) $2 \cdot 8$ and $x =$ _____ (k) x , y and $z =$ _____ (l) a and $b =$ _____
- (m) 4, p and $q =$ _____ (n) 4, b and 9 = _____ (o) 2, 4 and $c =$ _____
- (p) 3, 5 and $g =$ _____ (q) i and j , 105 = _____ (r) 13, 7 and $h =$ _____
- (s) q , r , s and $r =$ _____ (t) a and $b =$ _____ (u) p , s and $t =$ _____

3. Write an expression for the following.

- (a) What is 12 more than j ? _____
- (b) Samrin bought 2 kg of oranges and 3 kg of bananas. How many kg of fruits did she buy in total? _____
- (c) Jimmy is 4 years old now. How old will he be in x years time? _____
- (d) Write down the sum of the first 10 numbers. _____
- (e) What is the result when p is added to 16? _____
- (f) Sum of double the value of x and y . _____
- (g) Triple the value of k . _____
- (h) The length of Jack's beanstalk next week given that it is x cm and grown 2cm each week. _____
- (i) An 18m deep river rises by y meters to flood. What is the height of the flood level? _____
- (j) The number of apples Mary has given that she has x and John gives her y more. _____
- (k) Total money Sarah has given that she saved x dollars and receives y dollars as a gift? _____
- (l) What is the result when j is increased by 9? _____
- (m) Sam bought x kg of oranges and y kg of bananas. How many kg of fruits did Sam buy in total? _____
- (n) Lucy is currently 7 years old. How old will she be in n years? _____
- (o) Write down the sum of the first 15 numbers. _____
- (p) What is the result when p is added to 25? _____
- (q) If q is added to 30, what is the result? _____
- (r) What is the result when 40 is added to r ? _____