

TOPIC- WE DISTRIBUTE YET THINGS MULTIPLY

1. Simplify the following

(a) $(3x + 5) \times (5x - 2)$

(b) $(7 - x) \times (7 + x)$

(c) $37(2x^2 + 5x - 3)$

(d) $(4y - 3)^2$

(e) $(x + y)(z - p) + (x - y)(z + p) + 2(xz + yp)$

(f) $(2x + 3y)^2$

(g) $(xy + 3z)^2$

(h) $(23m + 32n)^2$

(i) $(32m + 23n)(32m - 23n)$

(j) $(2x + 3y)(2x - 3y)$

(k) $(34x + 56y)(34x - 56y)$

(l) $(a^2 + b^2)(-a^2 + b^2)$

(m) $(12x - 15y)(12x - 15y)$

(n) $(4x + \frac{1}{4x})^2$

(o) $(-m - \frac{1}{m})^2$

2. Check each of the simplifications and see if there is a mistake. If there is a mistake, then write the correct expression.

(a) $12(10s - 6) + 3 = 5s - 3 + 3 = 5s$

(b) $5w^2 + 6w = 11w^2$

(c) $2a^3 + 3a^3 + 6a^2b + 6ab^2 = 5a^3 + 12a^2b^2$

(d) $(5m + 6n)^2 = 25m^2 + 36n^2$

(e) $(-q + 2)^2 = q^2 - 4q + 4$

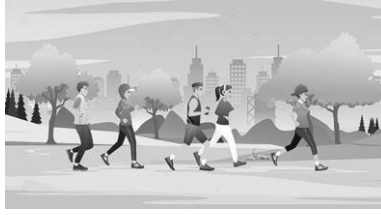
(f) $3a(2b \times 3c) = 6ab \times 9ac = 54a^2bc$

3. The number of students going on a trip is $(x + 2)$ and the cost of one ticket is ₹ $(2x - 1)$. If 3 students cancel their trip, find the difference in the total cost before and after the cancellation.

4. A rectangular bedroom has a length of $(x + 8)$ feet and a breadth of $(x - 2)$ feet. Find its area. If both the length and breadth are increased by 1 foot, find the increase in the area of the room.

5. A number leaves a remainder of 2 when divided by 5, and another number leaves a remainder of 3 when divided by 5. What is the remainder when their sum, difference, and product are divided by 5?

6. Raj and Ravi are best friends who love to stay fit. Every morning, they go jogging in the different parks in their neighbourhood. Raj jogs around a rectangular park of dimensions $(ab + 4bc)$ m and $(ab - 4bc)$ m. Ravi, on the other hand, jogs around a square park of side $(5x + 2y)$ m.



On the basis of above information, answer the following questions.

- (i) How much distance does Raj cover in one round?
- (ii) How much distance does Ravi cover in one round?
- (iii) Find the area of the square park.