

## Miscellaneous.

1. Remove the parenthesis from  $a + (b - c)$ ;  $(a - b) - c$ ;  $a - (b + c)$ ;  $a - (b - c)$ ;  $a + b - (c + d - e)$ .
2.  $(a + b) \times (a + b) = ?$   $(a + b) \times (a - b) = ?$
3.  $(2a - 3b + 4c) \times (3a + 2b - 5c) = ?$
4.  $(5c + 3) \times (c + d) - 5 \times (4c - 2d) + 12c = ?$
5.  $(ac - bc + ad - bd) \div (a - b)$ ;  $(a^2 - b^2) \div a + b$ .
6.  $(a^4 - b^4) \div (a^2 - b^2)$ ;  $(a^5 + b^5) \div (a + b)$ .
7.  $a + b - [c - d - (g + h - i) + 4g - i] = ?$
8. Separate into two factors:  $ab - b$ ;  $x^2 - x$ ;  $ax - 2ay + 3az$ .
9.  $\frac{a+b}{a-b} + \frac{a-b}{a+b} = ?$   $\frac{a+b}{a-b} - \frac{a-b}{a+b} = ?$
10.  $a$  and  $b$  are two numbers. Express (a) the square of the sum of both numbers; (b) the sum of the squares of both numbers increased by double their product; (c) the square of the difference of both numbers; (d) the difference of the squares of the two numbers; (e) the product of the sum and the difference of both numbers; (f) the cube of the sum of both numbers.
11. Find the value of  $x$  in:  $ax = m$ ;  $3x - 12x = -36$ ;  $12x - nx = a$ ;  $mx + nx = a$ ;  $ax + x = m$ .
12. Find the value of  $x$ :  $3x - 10 = 14 - x$ ;  $ax - b = c$ ;  $12x - 7 + 4x = 2 - 4x + 8x$ ;  $8x + 30 - 6x = 12x - 6 - 16x$ ;  $ab - ax = c$ ;  $ax = c - bx$ ;  $ax - c = bx - d$ .
13. Find the value of  $x$ :  $13\frac{3}{4} - \frac{x}{2} = 2x - 8\frac{3}{4}$ ;  $2x + 7 + \frac{3x}{2} = 6x - 23$ ;  $77 - \frac{48}{x} = 53$ ;  $\frac{ab}{x} = c$ .
14. Find the value of  $x$ :  $\frac{a}{x} = b + c$ ;  $ax = \frac{b}{c}$ ;  $ab - \frac{x}{a} = c$ ;  $ab - \frac{a}{x} = bc$ ;  $\frac{x}{2} + \frac{x}{3} + \frac{x}{4} = 7x - 712 + \frac{x}{5}$ .
15. Find  $x$  in the following proportions:  $4 : 5 = 18 : x$ ;  $x : 18 = 9 : 31\frac{1}{2}$ ;  $x : \frac{a}{c} = \frac{c}{9} : \frac{a}{b}$ ;  $\frac{a}{b} : x = \frac{c}{d} : \frac{b}{d}$ ;  $6 : x = x : 25$ ;  $8 : x = x : 20$ ;  $\frac{1}{2} : \frac{x}{4} = 3 : 8$ ;  $ax : 2ab = b : c$ ;  $2ac : bx = 3a : 4c$ .