IMPACT SIMPILIFIES SERIES
(JAMB MATHEMATICS MADE EASY)

Subject of formula

1. If $\frac{x}{a+1} + \frac{y}{b} = 1$, make y the subject of the relation. $y = \frac{b(a+1-x)}{a+1}$
2. Given $M = N\sqrt{\frac{SL}{T}}$, make T the subject of the formula $T = \frac{N^2SL}{M^2}$
3. Make Q the subject of the formula when $L = \frac{4}{3}M\sqrt{PQ}$ $Q = \frac{9L^2}{16M^2P}$
4. If $p = \sqrt{\frac{rs^3}{t}}$, express r in terms of p, s and t $r = \frac{p^2t}{s^3}$
5. Make L the subject of the formula if $d = \sqrt{\frac{42W}{5L}}$ $\frac{42W}{5d^2}$
6. If $T = 2\pi\sqrt{\frac{l}{g}}$ make g the subject of the formular $\frac{4\pi^2l}{T^2}$
7. Make Q the subject of the formula if $P = \frac{M}{5}(X + Q) + 1$ $Q = \frac{5P - 5 - MX}{M}$
8. Make r the subject of the formula $\frac{x}{r+a} = \frac{a}{r}$ $\frac{a^2}{x-a}$
9. If $gt - k - w = 0$, make g the subject of the formula $g = \frac{k+w}{t}$
10. If $gt^2 - k - w = 0$, make g the subject of the formula $g = \frac{k+w}{t^2}$
11. If $s = \sqrt{t^2 - 4t + 4}$, find t in terms of s $2 \pm s$
12. Make n the subject of the formula if $w = \frac{v(2+cn)}{1-cn}$ $n = \frac{1}{c}(\frac{w-2v}{v+w})$
13. Make R the subject of the formula if $T = \frac{kR^2 + M}{3}$ $R = \sqrt{\frac{3T-M}{K}}$
14. If $P = \left[\frac{Q(R-T)}{15}\right]^{\frac{1}{3}}$, make T the subject of the relation. $T = R - \frac{15P^3}{Q}$

Factorization

15. Find the factors of $2x^2 + 5x - 3$ $(2x - 1)(x + 3)$
16. Factorize $k^2 - 2kp + p^2$ $(k - p)^2$
17. Factorize $ax - by - ay + bx$ $(a + b)(x - y)$
18. Factorize $2y^2 - 15xy + 18x^2$ $(2y - 3x)(y - 6x)$
19. If $(x - 1)$, $(x + 1)$ and $(x - 2)$ are factors of the polynomial $ax^3 + bx^2 + cx - 1$ find a, b, c respectively. $-\frac{1}{2}, 1, \frac{1}{2}$
20. Solve for x and y in the equation below $x^2 - y^2 = 4$ and $x + y = 2$ $x = 2, y = 0$
21. Factorize completely $9y^2 - 16x^2$ $(3y - 4x)(3y + 4x)$
22. Factorize completely $\frac{x^3 + 3x^2 - 10x}{2x^2 - 8}$ $\frac{x(x+5)}{2(x+2)}$
23. Factorize completely $ac - 2bc - a^2 + 4b^2$ $(a - 2b)(c - a - 2b)$
24. Factorize completely $4abx - 2axy - 12b^2x + 6bxy$ $(2x)(a - 3b)(2b - y)$
25. Factorize $4x^2 - 9y^2 + 20x + 25$ $(2x - 3y + 5)(2x + 3y + 5)$
26. Solve for x and y if $x - y = 2$ and $x^2 - y^2 = 8$ 3, 1
27. A polynomial in x whose roots are $\frac{4}{3}$ and $-\frac{3}{5}$ is $15x^2 - 11x - 12$
28. Find the roots of $x^3 - 2x^2 - 5x + 6$ $(x + 2)(x - 3)(x - 1)$
29. A polynomial in x whose zeros are -2, -1 and 3 is $x^3 - 7x - 6$
30. Find the value where the curve $y = x^3 + 2x^2 - 5x - 6$ crosses the x axis $-3, 2, -1$
31. Factorize completely $(4x + 3y)^2 - (3x - 2y)^2$ $(x + 5y)(7x + y)$
32. Solve for x in the equation $x^3 - 5x^2 - x + 5 = 0$ $-1, 5, 1$
33. Solve the equation $m^2 + n^2 = 29$, $m + n = 7$ (5, 2) and (2, 5)
34. Divide $a^{3x} - 26a^{2x} + 156a^x - 216$ by $a^{2x} - 24a^x + 108$ $a^x - 2$

Product

35. What is the product of $2x^2 - x + 1$ and $3 - 2x$. $-4x^3 + 8x^2 - 5x + 3$

Division

36. Divide $6x^2 - 13x + 5$ by $2x - 1$ $3x - 5$

Remainders theorem

37. The remainder when $6p^3 - p^2 - 47p + 30$ is divided by $p - 3$ is 42
38. Find the remainder when $2x^3 - 11x^2 + 8x - 1$is divided by $x + 3$ -178
39. Find the value of k if the expression $kx^3 + x^2 - 5x - 2$ leaves a remainder 2 when it is divided by $2x + 1$ -10
40. Find the remainder when $x^3 - 2x^2 + 3x - 3$ is divided by $x^2 + 1$ $2x - 1$
41. Find the remainder when $3x^3 + 5x^2 - 11x + 4$ is divided by $x + 3$ 1

Factors

42. Find the value of k if $y - 1$ is a factor of $y^3 + 4y^2 + ky - 6$ $k = 1$
43. If $x - 4$ is a factor of $x^2 - x - k$, then k is $k = 12$
44. If $9x^2 + 6xy + 4y^2$ is a factor of $27x^3 - 8y^3$, find the other factor $3x - 2y$
45. If $2x^2 - kx - 12$ is divisible by $x - 4$, find the value of k 5