

با استفاده از اتحادها حاصل عبارت های زیر را حساب کنید

$$(x+y)^2 = x^2 + 2xy + y^2$$

$$(x-y)^2 = x^2 - 2xy + y^2$$

$$(2a+b)^2 = 4a^2 + 4ab + b^2$$

$$(3m-h)^2 = 9m^2 + h^2 - 6mh$$

$$(-4x-z)^2 = 16x^2 + 1xz + z^2$$

$$(-a+5b)^2 = a^2 + 10b^2 - 10ab$$

$$\left(a + \frac{2}{3}\right)^2 = a^2 + \frac{4}{3}a + \frac{4}{9}$$

$$\left(\frac{1}{2}x - \frac{2}{3}y\right)^2 = \frac{1}{4}x^2 + \frac{4}{9}y^2 - \frac{2}{3}xy$$

$$(x+y)(x-y) = x^2 - y^2$$

$$(2x+y)(2x-y) = 4x^2 - y^2$$

$$(\sqrt{5}x+v)(v-\sqrt{5}x) = 49 - 5x^2$$

$$(x+a)(x+b) = x^2 + (a+b)x + ab$$

$$(h+2)(5+h) = h^2 + 7h + 10$$

$$(1+k)(k-3) = k^2 - 2k - 3$$

$$(6+x)(6+y) = 36 + 4(x+y) + xy$$

$$(A+B)^2 = A^2 + 2AB + B^2$$

$$101^2 = (100+1)^2 = 10000 + 200 + 1 = 10201$$

$$\left(x + \frac{1}{2}\right)\left(x^2 + \frac{1}{2}\right)\left(x - \frac{1}{2}\right) = \left(x^2 - \frac{1}{4}\right)\left(x^2 + \frac{1}{2}\right) = x^4 - \frac{1}{4}$$

$$(2x^2 + 3y)^2 = 4x^4 + 9y^2 + 12x^2y$$

$$(2x-3)^2 = 4x^2 - 12x + 9$$

$$x^2 + 2xy + y^2 - (x^2 - 2xy + y^2) =$$

$$(x+2y+5)(x+2y-5) = (x+2y)^2 - 25 = x^2 + 4xy + 4y^2 - 25$$

$$(x+y)^2 - (x-y)^2 =$$

$$x^2 + 2xy + y^2 - x^2 + 2xy - y^2 = 4xy$$

$$(z-x+y)^2 =$$

$$97^2 = (100-3)^2 = 10000 - 600 + 9 = 9409$$

$$z^2 + x^2 + y^2 - 2xz + 2zy - 2xy$$

$$(-z-x-y)^2 =$$

$$(2m^2 + 3h^2)^2 = 4m^4 + 9h^4 + 12m^2h^2$$

$$z^2 + x^2 + y^2 + 2xz + 2zy + xy$$

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$$(2a - 3x + y)^2 = 4a^2 + 9x^2 + y^2 - 12ax + 4ay - 6xy$$

$$(2\sqrt{a} + x)^2 = 4a + 4\sqrt{a}x + x^2$$

$$(a - y)(y + a) = (a - y)(a + y) = a^2 - y^2$$

$$(x + y)(x - y) = x^2 - y^2$$

$$(x + 1)(x + 3) = x^2 + 4x + 3$$

$$(3x + 2)(3x + 4) = 9x^2 + (2+4)3x + 8 = 9x^2 + 18x + 8$$

$$(1 + \sqrt{5})(1 - \sqrt{5}) = 1 - 5 = -4$$

$$(f + 1)(f - 1) = f^2 - 1$$

$$(5x^2 - 1)(5x^2 + 1) = 25x^4 - 1$$

$$(900^2 - 100^2) = (900 + 100)(900 - 100) = 1000 \times 800 = 800000$$

$$\left(x - \frac{y}{3}\right)\left(x + \frac{y}{3}\right) = x^2 - \frac{y^2}{9}$$

$$(9x - 1)(9x + 1) = 81x^2 - 1$$

$$(\sqrt{x} + \sqrt{a})^2 = x + a + 2\sqrt{ax}$$

$$(A + B)(A - B) = A^2 - B^2$$

$$(r - 3)(r - 1) = r^2 - 4r + 3$$

$$(s - 3)^2 = s^2 - 6s + 9$$

$$(3 - 2xy)^2 = 9 - 12xy + 4x^2y^2$$

$$(2b - 5)^2 = 4b^2 - 20b + 25$$

$$(w + 3)(w - 1) = w^2 + 2w - 3$$

$$(10w + 3)(10w - 1) = 100w^2 + (3-1)10w + (3)(-1) = 100w^2 + 20w - 3$$

$$(x^2y^2 + x)^2 = x^4y^4 + x^2 + 2x^3y^2$$

$$(3x - 4y)^2 = 9x^2 + 16y^2 - 24xy$$

$$(1 + \sqrt{v})^2 = 1 + 2\sqrt{v} + v = 1 + 2\sqrt{v} + v$$

$$(y + 3y)(3y - 1) = 9y^2 - 3y - 3y = 9y^2 - 6y$$

$$(2a + 3b)^2 = 4a^2 + 12ab + 9b^2$$

$$(a + (-b))^2 = a^2 - 2ab + b^2$$

$$2a(2x + 3y)^2 = 2a(4x^2 + 12xy + 9y^2) = 8ax^2 + 24axy + 18ay^2$$

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$$a^r + rab + b^r = (a+b)^r = (a+b)(a+b) \quad S^r - rS + 1 = (S-1)^r = (S-1)(S-1)$$

$$x^r + (a+b)x + ab = (x+a)(x+b) \quad S^r - rS + 1 = (S-r)(S-r)$$

$$x^r - y^r = (x+y)(x-y) \quad b^r - r^2 = (b-r)(b+r)$$

$$a^r - rab + b^r = (a-b)^r = (a-b)(a-b) \quad a^r - b^r = (a^r + b^r)(a^r - b^r) = (a^r + b^r)(a-b)(a+b)$$

$$(ra+b)^r = (ra+b)(ra+b) \quad 1 - (ra+x)^r = [1+(ra+x)][1-(ra+x)]$$

$$(1+ra+x)(1-ra-x)$$

$$x^r + \Delta x + r = (x+r)(x+1) \quad \Delta xy + rx - rx^r = -rx(r^2x - r^2y - r)$$

$$S^r - 1 \circ S + r\Delta = (S-\Delta)(S-\Delta) \quad xy + xz = x(y+z)$$

$$m^r + 1 \vee m + r = (m+r)(m+1) \quad x^r + rX + 1 \circ = (x+r)(x+\Delta)$$

$$rX^r + rX + r = r(x^r + rx + 1) = r(x+1)(x+1) \quad 1 - m^r = (1-m)(1+m)$$

$$rX^r - rY^r = (rx - ry)(rx + ry) \quad -m^r + 1 = 1 - m^r = (1-m)(1+m)$$

$$rX^r + rX + r = r(x^r + rx + 1) = r(x+1)^r = r(x+1)(x+1) \quad x^r - rX - \Delta = (x-r)(x+r)$$

$$n^r - 1 \circ n^r + r\Delta = (n^r - \Delta)^r = (n^r - \Delta)(n^r - \Delta) \quad x^r + x + \frac{1}{r} = (x + \frac{1}{r})^r = (x + \frac{1}{r})(x + \frac{1}{r})$$

$$Z^r - rZ + r = (Z-r)^r = (Z-r)(Z-r) \quad (x^r - y^r) + rX + r = (x^r + rx + r) - y^r = (x+r)^r - y^r$$

$$= (x+r+y)(x+r-y)$$

$$\Delta x^r + r^2 xy + 1 \Delta y^r = r(x^r + rx + 1) = r(x+1)(x+1) \quad rX^r + rX + r = r(x^r + rx + 1) = r(x+1)(x+1)$$

$$-x^r + y^r = y^r - x^r = (y-x)(y+x) \quad A = rX^r + 1 \Delta X - 1 \Delta = r(x^r - rx + 1) = r(x-1)(x+1)$$

$$rA = rx^r + 1^r(rX) - r^2 = r(x-1)(x+1) = (x-1)(rx+1\Delta)$$

$$a(x+1)+b(x+1)=(x+1)(a+b)$$

$$rX^r - pr = r(x^r - 1) = r(x^r + 1)(x^r - 1)$$

$$a(x+1)+b(x+1)^r = (x+1)[a+b(x+1)]$$

$$xy + pz + xz + py = x(y+z) + r(2+y)$$

$$x^r - x^r - r \circ x = x(x^r - x - r) = x(x - a)(x + f)$$

$$(ry - px) + ry^r - qx^r = ry - rx + (ry - rx)(ry + rx) = (ry - rx)(1 + ry + rx)$$

$$a^r - a = (a^r + 1)(a^r - 1) = (a^r + 1)(a - r)(a + r)$$

$$ax - x + a - 1 = ax - 1 + a - x = x(a - 1) + (a - 1) = (a - 1)(x + 1)$$

$$r \Delta x^r + r \circ x^r + q x^r = x^r (r \Delta x^r + r \circ x + q) = x^r (\Delta x + r)(\Delta x + r)$$

$$x^r - x^r + y^r - y = y^r - x^r = (y - x)(y + x)$$

$$rx^r - rx - r = r(x^r - rx - 1) = r(x - r)(x + r)$$

$$a^r - a^r - r \circ a = a(a^r - a - r) = a(a - a)(a + r)$$

$$\Delta x + \Delta = \Delta(x + 1)$$

$$rz^r - rz + rz = r(2^r - rz + r) = r(2 - r)(2 + r)$$

$$(x + r)^r = (x + r)(x + r)$$

$$h^r + r h + r q = (h + r)(h + r)$$

$$h^r + r h + r \circ = (h + r)(h + r)$$

$$h^r - r q = (h - r)(h + r)$$

$$x^r + r \circ / r x + r \circ / r = (x + r)(x + r)$$

$$x^r + r \circ / r x + r \circ / r = (x + r)(x + r)$$

$$-r r + r \circ x + x^r = (x + r)(x - r)$$

$$-r - y + y^r = y^r - y - r = (y - r)(y + r)$$

$$y^r - y - r = (y - r)(y + r)$$