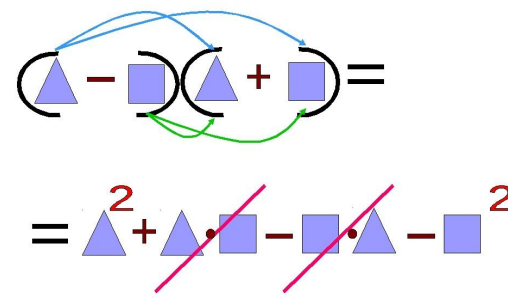


Метод группировки с добавлением фиктивных (виртуальных) слагаемых для разложения на множители: надо прибавить и отнять одно и то же искусственно придуманное слагаемое, чтобы с ними возможно было проделать обычный метод группировки

- 1) $x^3 - y^3 = (x-y)(x^2+xy+y^2)$
- 2) $x^3 + y^3 = (y+x)(x^2+y^2-xy)$
- 3) $x^5 + y^5 = (x+y)(x^4+y^4-x^3y-y^3x+x^2y^2)$
- 4) $x^5 - y^5 = (x-y)(x^4+y^4+x^3y+x^2y^2+xy^3)$



$$x^3 - y^3 = x^3 - y^3 + xy^2 - xy^2 + yx^2 - yx^2 =$$

$$\begin{aligned} x^3 - y^3 &= x^3 - y^3 + xy^2 - xy^2 + yx^2 - yx^2 = \\ &= x^3 - yx^2 - y^3 + xy^2 - xy^2 + yx^2 = \\ &= x(x^2 - yx) + y(-y^2 + xy) + x(-y^2 + yx) = \\ &= x^2(x-y) + y^2(-y+x) + xy(-y+x) = \\ &= (-y+x)(x^2 + y^2 + xy) \end{aligned}$$

ДОДЕЛАТЬ

$$\begin{aligned} 1) x^3 - y^3 &= x^3 - y^3 + xy^2 - xy^2 + yx^2 - yx^2 = \\ &= x^3 - xy^2 - y^3 + yx^2 + xy^2 - yx^2 = \\ &= x(x^2 - y^2) + y(-y^2 + x^2) + x(y^2 - yx) = \\ &= (-y^2 + x^2)(x+y) + x(y^2 - yx) = \\ &= (x^2 - y^2)(x+y) + xy(y-x) = \\ &= (x-y) * (x+y)(x+y) + xy(y-x) = \\ &= \underline{(x-y) * (x+y)(x+y)} - xy(-y+x) = \\ &= (x-y) ((x+y)^2 - xy) = \\ &= (x-y) (x^2 + 2xy + y^2 - xy) = \\ &= (x-y) (x^2 + xy + y^2) \end{aligned}$$

ДЗ

$$\begin{aligned} x^3 + y^3 &= x^3 + y^3 + xy^2 - xy^2 + yx^2 - yx^2 = \\ &= x^3 - yx^2 + y^3 - xy^2 + xy^2 + yx^2 = \\ &= x(x^2 - yx) + y(y^2 - xy) + x(y^2 + x^2) = \\ &= x^2(x-y) + y^2(y-x) + x(y^2 + x^2) = \\ &= x^2(x-y) - y^2(-y+x) + x(y^2 + x^2) = \\ &= (x-y)(x^2 - y^2) + x(y^2 + x^2) \end{aligned}$$

$$\begin{aligned} x^3 + y^3 &= x^3 + y^3 + xy^2 - xy^2 + yx^2 - yx^2 = \\ &= x^3 + yx^2 + y^3 + xy^2 - xy^2 - yx^2 = \\ &= x^2(x+y) + y^2(y+x) + x(-y^2 - yx) = \\ &= x^2(x+y) + y^2(y+x) + xy(-y-x) = \\ &= x^2(x+y) + y^2(y+x) - xy(y+x) = \\ &= (y+x)(x^2 + y^2 - xy) \end{aligned}$$

1 учитель 32 ученика

15 ученик и 5 учителей одновременно

всем раздаются в начале урока листки с задачами

$$\begin{aligned} x^5 + y^5 &= x^5 + y^5 + xy^4 - xy^4 + yx^4 - yx^4 = \\ &= x^5 + yx^4 + y^5 + xy^4 - xy^4 - yx^4 = \\ &= x^4(x+y) + y^4(y+x) + xy(-y^3 - x^3) = \\ &= \underline{x^4(x+y) + y^4(y+x) - xy(y^3 + x^3)} = \\ &= x^4(x+y) + y^4(y+x) - xy(y+x)(x^2 + y^2 - xy) = \\ &= (x+y)(x^4 + y^4 - xy(x^2 + y^2 - xy)) = \\ &= (x+y)(x^4 + y^4 - x^3y - y^3x + (xy)^2) = \\ &= (x+y)(x^4 + y^4 - x^3y - y^3x + x^2y^2) \end{aligned}$$

$$\begin{aligned} x^5 - y^5 &= x^5 - y^5 + xy^4 - xy^4 + yx^4 - yx^4 = \\ &= x^5 - yx^4 - y^5 + xy^4 - xy^4 + yx^4 = \\ &= x^4(x-y) + y^4(-y+x) + xy(-y^3 + x^3) = \\ &= x^4(x-y) + y^4(x-y) + xy(x^3 - y^3) = \\ &= x^4(x-y) + y^4(x-y) + xy(x-y)(x^2 + y^2) = \\ &= (x-y)(x^4 + y^4 + xy(x^2 + y^2)) = \\ &= (x-y)(x^4 + y^4 + x^3y + (xy)^2 + xy^3) = \\ &= (x-y)(x^4 + y^4 + x^3y + x^2y^2 + xy^3) \end{aligned}$$

- 1
- 2 +
- 3
- 4
- 5 +
- 6
- 7 подсказка
- 8

$xy * xy = xy^2$ неверно
 $xy * xy = (xy)^2 = x^2 * y^2$ верно