

* Вспомогательное *

* Квадрат бинома, разность квадратов *

20) (уменьшитель)

$$a) (x-3)^2 = x^2 + 2 \cdot x \cdot (-3) + (-3)^2 = x^2 - 6x + 9$$

$$b) (0,2+5w)^2 = 0,2^2 + 2 \cdot 0,2 \cdot 5w + (5w)^2 = 0,04 + 2w + 25w^2$$

$$c) (y+3g)^2 = y^2 + 2 \cdot y \cdot 3g + 3g^2 = y^2 + 78y + 1521$$

$$d) (ab-1)^2 = (ab)^2 + 2 \cdot ab \cdot (-1) + (-1)^2 = a^2b^2 - 2ab + 1$$

$$e) (n-0,25)^2 = (n-\frac{1}{4})^2 = n^2 + 2 \cdot n \cdot (-\frac{1}{4}) + (-\frac{1}{4})^2 = n^2 - \frac{n}{2} + \frac{1}{16}$$

$$f) (x^2+1)^2 = (x^2)^2 + 2 \cdot x^2 \cdot 1 + 1^2 = x^4 + 2x^2 + 1$$

$$g) (a^2b^3-k)^2 = (a^2b^3)^2 + 2 \cdot a^2b^3 \cdot (-k) + (-k)^2 = a^4b^6 - 2a^2b^3k + k^2$$

$$h) (2a+\frac{1}{2})^2 = (2a)^2 + 2 \cdot 2a \cdot \frac{1}{2} + (\frac{1}{2})^2 = 4a^2 + 2a + \frac{1}{4}$$

$$3) (2ax^3-\frac{1}{4}k)^2 = (2ax^3)^2 + 2 \cdot 2ax^3 \cdot (-\frac{1}{4}k) + (-\frac{1}{4}k)^2 =$$

$$= 4a^2x^6 - ax^3k + \frac{1}{16}k^2$$

21)

$$a) (2y-x)^2 - (x+y)^2 = (2y)^2 + 2 \cdot 2y \cdot (-x) + (-x)^2 - (x^2 + 2 \cdot x \cdot y + y^2) =$$

$$4y^2 - 4xy + x^2 - x^2 - 2xy - y^2 = 3y^2 - 6xy$$

$$b) 2(x^2+1)^2 - 3(x^2-1)^2 = 2((x^2)^2 + 2 \cdot x^2 \cdot 1 + 1^2) - 3((x^2)^2 + 2 \cdot x^2 \cdot (-1) + (-1)^2) =$$

$$= 2x^4 + 4x^2 + 2 - 3x^4 + 6x^2 - 3 = -x^4 + 10x^2 - 1$$

$$25) a) (3+w)(3-w) = 3^2 - w^2 = 9 - w^2$$

$$b) (2a^2-7)(2a^2+7) = (2a^2)^2 - 7^2 = 4a^4 - 49$$

26)

$$a) 81 - z^2 = 9^2 - z^2 = (9-z)(9+z)$$

$$b) a^2x^4 - 0,01 = a^2(x^2)^2 - (0,1)^2 = (ax^2)^2 - 0,1^2 = (ax^2 - 0,1)(ax^2 + 0,1)$$

$$c) 6^4 - 25x^2 = (6^2)^2 - 5^2x^2 = (6^2 - 5x)(6^2 + 5x)$$

27)

$$a) 77^2 - 23^2 = (77-23)(77+23) = 54 \cdot 100 = 5400$$

$$b) (2\sqrt{5}+5\sqrt{2})(5\sqrt{2}-2\sqrt{5}) = (5\sqrt{2})^2 - (2\sqrt{5})^2 = 5^2(\sqrt{2})^2 - 2^2(\sqrt{5})^2 = 25 \cdot 2 - 4 \cdot 5 = 50 - 20 = 30$$

Значит разности 21, уродства 22, разности 25, 27