(a)

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

(b)

$$(x+y)^5-x^5-y^5=x^5+5x^4y+10x^3y^2+10x^2y^3+5xy^4+y^5-x^5-y^5=$$
$$=5x^2y(x^2+xy+y^2)+5xy^2(x^2+xy+y^2)=5xy(x+y)(x^2+xy+y^2)$$

(c)

$$(x+y)^7-x^7-y^7=x^7+7x^6y+21x^5y^2+35x^4y^3+35x^3y^4+$$
$$+21x^2y^5+7xy^6+y^7-x^7-y^7=7x^6y+14x^5y^2+$$
$$+7x^4y^3+14x^4y^3+14x^3y^4+7x^2y^5+7x^5y^2+$$
$$+14x^4y^3+7x^3y^4+14x^3y^4+14x^2y^5+7xy^6=$$
$$=7x^2y(x^4+2x^3y+x^2y^2+2x^2y^2+2xy^3+y^4)+$$
$$+7xy^2(x^4+2x^3y+x^2y^2+2x^2y^2+2xy^3+y^4)=$$
$$=(7x^2y+7xy^2)(x^2+2xy+y^2)^2=$$
$$=7xy(x+y)(x^2+xy+y^2)^2.$$

(Lőwy József, Losoncz.)

Megoldások száma: 32.