

2.9

- 1) $y(b-a) - x(b-a) = (b-a)(y-x)$
- 2) $a(x^2+y^2) - b(x^2+y^2) = (x^2+y^2)(a-b)$
- 3) $a(b-c) - b(b-c) + c(b-c) = (b-c)(a-b+c)$
- 4) $(2a+3b)(2x+y) - (b-a)(2x+y) =$
 $(2x+y)((2a+3b)-(b-a)) = (2x+y)(2a+3b-b+a) =$
 $(2x+y)(3a+2b)$
- 5) $(x-2y)(a-b) - (b-a)(2x+y) = (x-2y)(a-b) + (a-b)(2x+y) =$
 $(a-b)((x-2y)+(2x+y)) = (a-b)(x-2y+2x+y) = (a-b)(3x-y)$
- 6) $(4a-2b)(2x-3y) + (3y-2x)(b-2a) =$
 $2(2a-b)(2x-3y) + (2x-3y)(2a-b) = (2a-b)(2x-3y)(2+1) =$
 $3(2a-b)(2x-3y)$
- 7) $(a+b)(x-3y) - 2a(x-3y) = (x-3y)((a+b)-2a) =$
 $(x-3y)(a+b-2a) = (x-3y)(b-a)$
- 8) $(a+b)(x-y) + (x-y) - 3a(y-x) = (a+b)(x-y) + 1(x-y) + 3a(x-y) =$
 $(x-y)((a+b)+1+3a) = (x-y)(a+b+1+3a) = (x-y)(4a+b+1)$
- 9) $3(2a-b)(4x-5) - (2x+1)(b-2a) =$
 $3(2a-b)(4x-5) + (2x+1)(2a-b) = (2a-b)(3(4x-5) + (2x+1)) =$
 $(2a-b)(12x-15+2x+1) = (2a-b)(14x-14) = 14(2a-b)(x-1)$
 $\underbrace{14x-14}_{14(x-1)}$
- 10) $a^2(x-1)(a+b) + a^3(1-x) = a^2(x-1)(a+b) - a^3(x-1) =$
 $a^2(x-1)((a+b)-a) = a^2(x-1)\underbrace{(a+b-a)}_b = a^2b(x-1)$
- 11) $(a+b)^2 + x(a+b) = (a+b)(a+b) + x(a+b) = (a+b)((a+b)+x) =$
 $(a+b)(a+b+x)$
- 12) $2a(a-b) - (a-b)^2 = 2a(a-b) - (a-b)(a-b) = (a-b)(2a-(a-b)) =$
 $(a-b)(2a-a+b) = (a-b)(a+b)$
- 13) $2a(m-n)^2 - am(m-n)^2 = a(m-n)^2(2-m)$

$$14) \ a(a+b) - b(a+b) + (a+b)^2 = a(a+b) - b(a+b) + (a+b)(a+b) = \\ (a+b)(a-b+(a+b)) = (a+b) \underbrace{(a-b+a+b)}_{2a} = 2a(a+b)$$

$$15) \ (a+b)^3 - (a+b)^2 = (a+b)^2((a+b)-1) = (a+b)^2(a+b-1)$$

$$16) \ (2x+y) - a(2x+y) - (2x+y)^2 = (2x+y)(1-a-(2x+y)) = \\ (2x+y)(1-a-2x-y)$$