PST → $(a^2+2ab+b^2) \rightarrow (a+b)^2$
$(a^2-2ab+b^2) \rightarrow (a-b)^2$

DOTS → $(a^2-b^2) = (a+b)(a-b)$
order doesn't matter ∴ mult is commutative

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Date 2 May 16

For Exercises 1–15, factor completely.

GCM

1. $25g^2 - 25g$ — 1. $25g(g-1)$

GROUPING

$3x + 2x = x(3+2)$

2. $(f+4)(2f-3)+(f+4)(f+4) = (f+4)(2f-3+f+4)$ — 2. $(f+4)(3f+1)$

term term

GROUP.

3. $ax+2ay+bx+2by$
$a(x+2y)+b(x+2y)$ — 3. $(a+b)(x+2y)$

4. $6x^2+5xy-y^2$
$6x^2+6xy-xy-y^2$
$6x(x+y)-y(x+y)$ — 4. $(x+y)(6x-y)$

5. $4m^2+20mn+25n^2$
$4m^2+10mn+10mn+25n^2$
$2m(2m+5n)+5n(2m+5n)$ — 5. $(2m+5n)^2$

6. $8x^3-1$
$((2x)^3-(1)^3) = (2x-1)(4x^2+2x+1)$ — 6. $(2x-1)(4x^2+2x+1)$

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7. $49c^6-4m^2$ — 7. $(7c^3-2m)(7c^3+2m)$

8. $4z^4-4z^2-15$
$4z^4+6z^2-10z^2-15 = 2z^2(2z^2+3)-5(2z^2+3)$ — 8. $(2z^2+3)(2z^2-5)$

PST → DOTS

9. $x^2+10x+25-64y^2$
$(x+5)^2-(8y)^2 = [(x+5)-8y][(x+5)+8y]$ — 9. $(x+5-8y)(x+5+8y)$

DOTS

10. $81c^2-64d^2$
$(9c)^2-(8d)^2$ — 10. $(9c+8d)(9c-8d)$

11. $-2x^2+7x-3$
$-1(2x^2-7x+3)$
$-1(2x-1)(x-3)$ — 11. $-1(2x-1)(x-3)$

12. $3p^2-14pq+8q^2$
$3p^2-12pq-2pq+8q^2 = 3p(p-4q)-2q(p-4q)$ — 12. $(p-4q)(3p-2q)$

13. $30x^5y^2-5x^2y^3+20x^2y^4$
$5x^2y^2(6x^3-y+4y^2)$ — 13.

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PST w DOTS

14. $a^2+12a+36-9b^2$

$(a+6)^2-(3b)^2$

14. $(a+6-3b)(a+6+3b)$

15. $x^2r-sx^2-rz^2+sz^2$

$x^2r-rz^2-sx^2+sz^2$

$r(x^2-z^2)-s(x^2-z^2)$

$(r-s)(x^2-z^2)$

$(r-s)(x-z)(x+z)$

15. $(r-s)(x-z)(x+z)$

16. Explain why $(2a-b^2)c+4(2a-b^2)$ is not in factored form. Then factor the polynomial.

$(c+4)(2a-b^2)$

16. $(2a-b^2)$ is GCF

17. Which of the following is *not* a factored form of $-x^3+27$? $=-(x^3-3^3)=$

$-(x-3)(x^2+3x+9)$

A. $-(x+3)(x^2-3x+9)$

B. $-(x-3)(x^2+3x+9)$

C. $(-x+3)(x^2+3x+9)$

D. $(3-x)(x^2+3x+9)$

17. A

Solve the equations in exercises 18–22.

18. $3y^2+y-4=0$

$3y^2-3y+4y-4)=0$

$3y(y-1)+4(y-1)=0$

$(3y+4)(y-1)=0$

$3y+4=0 \quad y-1=0$

$y=-\frac{4}{3}$ & 1

18. $\{-\frac{4}{3},1\}$

19. $2a^2=11a-12$

$2a^2-11a+12=0$

$(2a-3)(a-4)=0$

$a=3/2$ or 4

19. $\{\frac{3}{2},4\}$

20. $3j(j-2)=2(2-j)$

$3j(j-2)-2(2-j)=0$

$3j(j-2)+2(j-2)=0$

$(3j+2)(j-2)=0$

$j=-\frac{2}{3}$ or 2

20. $\{-\frac{2}{3},2\}$

21. $x^3+12-3x^2-4x=0$

$x^3-3x^2-4x+12=0$

$x^2(x-3)-4(x-3)=0$

$(x^2-4)(x-3)=0$

$(x-2)(x+2)(x-3)=0$

21. $\{-2,2,3\}$

22. $8y^2-48y=216$

$8y^2-48y-216=0$

$8(y^2-6y-27)=0$

$\frac{8}{8}(y^2-9y+3y-27)=\frac{0}{8}$

$(y)(y-9)+3(y-9)$

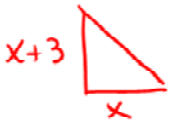
$(y+3)(y-9)=0$

22. $\{-3,9\}$

Solve each problem.

23. A portion of a wall is a right triangle with a height that is 3 feet more than its base. If the area of the triangle is 5 square feet, find the base.

23. 2ft



$\frac{1}{2}(x(x+3))=5$

$x^2+3x-10=0$

$(x+5)(x-2)=0$

$(a^3-b^3) = (a-b)(a^2+ab+b^2)$

$a = 2x \quad \& \quad b = 1$

$8x^3 - 1$

S O AP

$(2x-1)(4x^2 + 2x + 1)$

$(a^3-b^3) = (a-b)(a^2+ab+b^2)$

$(a^3+b^3) = (a+b)(a^2-ab+b^2)$

$x^2r - rz^2 - sx^2 + sz^2$

$r(x^2-z^2) - s(x^2-z^2)$

$(r-s)(x^2-z^2)$

$(r-s)(x-z)(x+z)$