Factoring WS PS D **Name** _____

Factor completely. If the polynomial is not factorable, write *prime*.

1. x^2+25

Prime

2. $10x^2+x-21$

$\frac{10x^2}{15x}$ $\frac{10x^2}{-14x}$ 210 → +15 −14

$(2x+3)(5x-7)$

3. $7a^3-8a^2+7a+8$

$a^2(7a-8)+1(7a+8)$

Prime

4. $15p^2+14p-8$

$\frac{15p^2}{20p}$ $\frac{15p^2}{-6p}$ 120 → +20 −6

$(3p+4)(5p-2)$

5. $a^2+12a-28$

$(a+14)(a-2)$

6. $9y^4-16$

$(3y^2+4)(3y^2-4)$

7. $12z^3+6z^2-18z$

$6z(2z^2+z-3)$

$\frac{2z^2}{3z}$ $\frac{2z^2}{-2z}$ 6 → +3 −2

$6(2z+3)(z-1)$

8. $-24y^5+12y^4-18y+9$

$-3(4y^4+3)(2y-1)$

9. $-g^2+6g+27$

$-(g-9)(g+3)$

10. $8y^3-16y^2+5y-10$

$(8y^2+5)(y-2)$

11. $125x^3-343$

$(5x-7)(25x^2+35x+49)$

12. x^2-6x+9

$(x-3)^2$

13. $5x^2+8x+3$

$(5x+3)(x+1)$

14. $8k^2-3-10k$

$(2k-3)(4k+1)$

15. $5x^3-x^2-20x+4$

$(5x-1)(x+2)(x-2)$

16. a^3+216

$(a+6)(a^2-6a+36)$

17. $16x^2-36y^2$

$4(2x+3y)(2x-3y)$

18. $4a^3-8a^2b+3ab^2$

$a(2a-b)(2a-3b)$

Factor completely. If the polynomial is not factorable, write *prime*.

1. x^2-25

$(x+5)(x-5)$

2. $10x^2+27x+5$

$(2x+5)(5x+1)$

3. $2x^3-8x^2+x-4$

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

4. $3p^2-21p-28$

Prime

5. $a^2-18a+72$

$(a-6)(a-12)$

6. $25x^2-49$

$(5w+7)(5w-7)$

7. $8w^3-60w^2-32w$

$4w(2w+1)(w-8)$

8. $12x^3+2x^2-30x-5$

$(2w^2-5)(6w+1)$

9. $-y^2+16y-63$

$-(y-9)(y-7)$

10. $12y^3-21y^2+28y-49$

$(3y^2+7)(4y-7)$

11. $27x^3-1$

$(3x-1)(9x^2+3x+1)$

12. $x^2+11x-42$

$(x+14)(x-3)$

13. $7x^2+26x+15$

$(7x+5)(x+3)$

14. $16v^2-54-12v$

$2(4v-9)(2v+3)$

15. $3x^3+x^2-12x-4$

$(x+2)(x-2)(3x+1)$

16. a^3+8

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

17. $16x^2+36y^2$

$4(4x^2+9y^2)$

18. $9x^2-30xy+21y^2$

$3(3x-7y)(x-y)$