Algebra – TEST REVIEW Name_____ hr___
Chapter 9: Polynomials

Write each polynomial in standard form.

1. $2y^2 - 3y + 16 - 7y^2 + 5y$

2. $4k^5 + 2k^2 - 3k^3 + k^2$

Simplify each expression by adding, subtracting or multiplying. Write each expression in standard form.

3. $(6x^2 + 3x - 5) + (8x^2 - 12x - 27)$

4. $(4x^2 - 3) - (7x^2 - 4x + 7)$

5. $(7y^3 - 3y^2) + (8y^4 + 3y^2)$

6. $(7x^4 + 12x^3) - (-2x^4 + x^3)$

7. $(7x^3 - 8 + 1x^2) - (6 + 8x - 6x^3)$

8. $(10m^2 + 6) + (3m^2 + 5)$

9. $-5x(3x - 10)$

10. $-2x(-7x^3 + 2x - 10)$

11. $(x - 7)(x + 6)$

12. $(3x - 5)(3x + 5)$

13. $(2x - 3)^2$

14. $(3x^2 - 6x)(7x - 5)$

15. $(4x^2 + 9)(-2x + 1)$

16. $(2x + 9)(3x^2 - 4x + 7)$

17. $(5x + 4)^2$

Factor each polynomial by Greatest Common Factor.

18. $6y^2 - 10$

19. $6v^4 + 9v^3 + 12v^2$

20. $5m^3 - 4m^2$

21. $20x^2y^9 + 15x^7y^6$

Factor each trinomial.

22. $x^2 - 7x + 10$

23. $x^2 + 15x - 54$

24. $x^2 + 9x + 8$

25. $x^2 + 20x + 96$

26. $x^2 - 5x - 6$

27. $m^2 - 2m + 1$

28. $x^2 + x - 2$

29. $x^2 - 2x - 63$

Factor each difference of two squares.

30. $x^2 - 49$

31. $25x^2 - 16$

32. $81x^8 - 4$

33. $9m^{10} - 1$

Algebra – TEST REVIEW Name Key hr___
Chapter 9: Polynomials

Write each polynomial in standard form.

1. $2y^2 - 3y + 16 - 7y^2 + 5y$

$-5y^2 + 2y + 16$

2. $4k^5 + 2k^2 - 3k^3 + k^2$

$4k^5 - 3k^3 + 3k^2$

Simplify each expression by adding, subtracting or multiplying. Write each expression in standard form.

3. $(6x^2 + 3x - 5) + (8x^2 - 12x - 27)$

$14x^2 - 9x - 32$

4. $(4x^2 - 3) - (7x^2 - 4x + 7)$

$4x^2 - 3 + -7x^2 + 4x + -7$

$-3x^2 + 4x - 10$

5. $(7y^3 - 3y^2) + (8y^4 + 3y^2)$

$3y^2$ cancel

$8y^4 + 7y^3$

6. $(7x^4 + 12x^3) - (-2x^4 + x^3)$

$7x^4 + 12x^3 + 2x^4 + -1x^3$

$9x^4 + 11x^3$

7. $(7x^3 - 8 + 1x^2) - (6 + 8x - 6x^3)$

$7x^3 - 8 + 1x^2 + -6 + -8x + 6x^3$

$13x^3 + 1x^2 - 8x - 14$

8. $(10m^2 + 6) + (3m^2 + 5)$

$13m^2 + 11$

9. $-5x(3x - 10)$

$-15x^2 + 50x$

10. $-2x(-7x^3 + 2x - 10)$

$14x^4 - 4x^2 + 20x$

11. $(x - 7)(x + 6)$

$x^2 + 6x - 7x - 42$

$x^2 - 1x - 42$

12. $(3x - 5)(3x + 5)$

$9x^2 + 15x - 15x - 25$

cancel

$9x^2 - 25$

13. $(2x - 3)^2$

$(2x - 3)(2x - 3)$

$4x^2 - 6x - 6x + 9$

$4x^2 - 12x + 9$

14. $(3x^2 - 6x)(7x - 5)$

$21x^3 - 15x^2 - 42x^2 + 30x$

$21x^3 - 57x^2 + 30x$

15. $(4x^2 + 9)(-2x + 1)$

$-8x^3 + 4x^2 - 18x + 9$

16. $(2x + 9)(3x^2 - 4x + 7)$

$6x^3 - 8x^2 + 14x + 27x^2 - 36x + 63$

$6x^3 + 19x^2 - 22x + 63$

17. $(5x + 4)^2$

$(5x + 4)(5x + 4)$

$25x^2 + 20x + 20x + 16$

$25x^2 + 40x + 16$

Factor each polynomial by Greatest Common Factor.

18. $\frac{6y^2}{2} - \frac{10}{2}$

$2(3y^2-5)$

19. $\frac{6v^4}{3v^2} + \frac{9v^3}{3v^2} + \frac{12v^2}{3v^2}$

$3v^2(2v^2+3v+4)$

20. $\frac{5m^3}{1m^2} - \frac{4m^2}{1m^2}$

$1m^2(5m-4)$

21. $\frac{20x^2y^9}{5x^2y^6} + \frac{15x^7y^6}{5x^2y^6}$

$5x^2y^6(4y^3+3x^5)$

Factor each trinomial.

22. $x^2-7x+10$

$(x-5)(x-2)$

10, -5×-2, -7

23. $x^2+15x-54$

$(x+18)(x-3)$

-54, 18×-3, 15

24. x^2+9x+8

$(x+8)(x+1)$

8, 8×1, 9

25. $x^2+20x+96$

$(x+12)(x+8)$

96, 12×8, 20

26. x^2-5x-6

$(x-6)(x+1)$

-6, -6×1, -5

27. m^2-2m+1

$(m-1)(m-1)$ or $(m-1)^2$

1, -1×-1, -2

28. x^2+x-2

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

-2, 2×-1, 1

29. $x^2-2x-63$

$(x-9)(x+7)$

-63, -9×7, -2

Factor each difference of two squares.

30. x^2-49

$(x+7)(x-7)$

31. $25x^2-16$

$(5x-4)(5x+4)$

32. $81x^8-4$

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

33. $9m^{10}-1$

$(3m^5-1)(3m^5+1)$