Algebra 1 NOTES

Chapter 7 Test Review v.2 Period_____HW#_____

Find the degree of the monomial.

1.	2.	3.
$2x^0$ → 0	y^3z^6 → $3+6=9$	$-8.4m^5$ → 5

Find the sum. Write answer in standard form.

4.	5.
$(-3x-9-2x^2)+(3x^2+5x)$ → x^2+2x-9 Combine Like Terms	$(3x^2-2y^2)+(5x^2-4x+3x^2)$ → $11x^2-4x-2y^2$ Combine Like Terms

Find the difference. Write answer in standard form.

6.	7.
$(-2d^2+3d-4)-(-5+6d)$ → $-2d^2+3d-4+5-6d$ → $-2d^2-3d+1$	$(8x^2+2xy)-(7x^2-6x+5y^2)$ → $8x^2+2xy-7x^2+6x-5y^2$ → $x^2+2xy+6x-12y^2$

Find the product. Write answer in standard form.

8.	9.	10. *(hint: special product!)*
$(m-2)(m+5)$ → $m^2+5m-2m-10$ → $m^2+3m-10$	$(6+4s)(3+s)$ → $18+6s+12s+4s^2$ → $18+18s+4s^2$	$(x-4y)^2$ → $(x-4y)(x-4y)$ → $x^2-4xy-4xy+16y^2$ → $x^2-8xy+16y^2$
11.	12.	13.
$(r-5)(r^2-r)$ → $r^3-r^2-5r^2+5r$ → r^3-6r^2+5r	$(x+3)(x^2-x+7)$ → $x^3-x^2+7x+3x^2-3x+21$ → $x^3+2x^2+4x+21$	$\left(a+\frac{5}{4}\right)\left(a-\frac{3}{4}\right)$ → $a^2-\frac{3}{4}a+\frac{5}{4}a-\frac{15}{16}$ → $a^2+\frac{1}{2}a-\frac{15}{16}$
14. *(hint: special product!)*	15.	16. *(hint: special product!)*
$\left(z-\frac{1}{3}\right)\left(z+\frac{1}{3}\right)$ Sum & Diff → $z^2-\frac{1}{9}$	$(n^2+3n-5)(-2+n)$ → $n^3+3n^2-5n-2n^2-6n+10$ → $n^3+n^2-11n+10$	$(4f+5)^2$ → $(4f+5)(4f+5)$ → $16f^2+40f+25$

Factor the polynomial **completely. This may take more than one step!**

17. $6z^2 - 48z$

GCF $6z$

$(6z)(z-8)$

18. $25y^3 + 150y^2$

GCF

$(25y^2)(y+6)$

19. $z^2 + 7z + 6$

$1 \cdot 6$, $1+6=7$

$(z+1)(z+6)$

20. $3x^2 - 30x + 72$

GCF 3

$3(x^2 - 10x + 24)$

24: $-4 \cdot -6$, $-4 + -6 = -10$

$(3)(x-6)(x-4)$

21. *(hint: special product!)* $x^4 - 16$

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

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

22. $8v^2 + 8v - 160$

GCF 8

$8(v^2 + v - 20)$

-20: $-4 \cdot 5$, $-4 + 5 = 1$

$(8)(v-4)(v+5)$

23. $15xy + 9x + 10y + 6$

$3x(5y+3) + 2(5y+3)$

$(3x+2)(5y+3)$

24. *(hint: special product!)* $-36 + 4z^2$

$4z^2 - 36$ GCF 4

$(4)(z^2 - 9)$

sum & DIFF

$(4)(z+3)(z-3)$

25. $2y^4 - 8y^2 + 5y - 20$

$2y^2(y^2 - 4) + 5(y-4)$

Does not Factor

26. $8v^2 - 60v - 32$

GCF 4

$4(2v^2 - 15v - 8)$

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

$2v^2 + v - 16v - 8$

$v(2v+1) - 8(2v+1)$

-16: $1 \cdot -16$, $1 + -16 = -15$

27. $-36x^2 + 21x + 30$

GCF -3

$-3(12x^2 - 7x - 10)$

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

$12z^2 + 8z - 15z - 10$

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

-120: $8 \cdot -15$, $8 + -15 = -7$

28. $x^2 - 2xy + x - 2y$

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

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

29. *(hint: special product!)* $16y^2 + 8y + 1$

$(4y+1)^2$

$16y^2 + 4y + 4y + 1$

$4y(4y+1) + 1(4y+1)$

16: $4 \cdot 4$, $4 + 4 = 8$

30. *(hint: special product!)* $h^2 - 22h + 121$

$(h-11)^2$

$h^2 - 11h - 11h + 121$

$h(h-11) - 11(h-11)$

121: $-11 \cdot -11$, $-11 + -11 = -22$

31. $2x^3 + 18x^2 + 16x$

GCF $2x$

$(2x)(x^2 + 9x + 8)$

$(2x)(x+1)(x+8)$

8: $8 \cdot 1$, $8 + 1 = 9$

Solve the equation.

32. $b(b-5)=0$

$b=0$ or $b-5=0$

$\boxed{0, 5}$

33. $(s-4)(s+5)=0$

$s-4=0$ or $s+5=0$

$\boxed{4, -5}$

34. $(p+6)^2=0$

$p+6=0$

$\boxed{-6}$

35. $(5-3d)(6-3d)=0$

$5-3d=0$ $\quad 5=3d \quad d=5/3$

$6-3d=0$ $\quad 6=3d \quad 2=d$

$\boxed{5/3, 2}$

36. $z(z+8)(6z+2)=0$

$z=0$

$z+8=0$

$6z+2=0$

$\boxed{0, -8, -\frac{1}{3}}$

37. $(1+3p)(3p-1)(p+4)=0$

$1+3p=0$

$3p-1=0$

$p+4=0$

$\boxed{-\frac{1}{3}, \frac{1}{3}, -4}$

38. $-4w(w-3)^2=0$

$-4w=0$

$w-3=0$

$\boxed{0, 3}$

39. $\left(\frac{1}{4}d-5\right)\left(\frac{1}{4}d+3\right)(d-6)=0$

$\frac{1}{4}d-5=0 \quad \frac{1}{4}d=5 \quad d=20$

$\frac{1}{4}d+3=0 \quad \frac{1}{4}d=-3 \quad d=-12$

$d-6=0 \quad d=6$

40. $z^2(z+8)(z+8)=0$

$z=0$

$z+8=0$

$z+8=0$

$\boxed{0, -8}$

41. $15n^2=-21n$ (move)

$15n^2+21n=0$ GCF

$3n(5n+7)=0$

$3n=0$

$5n+7=0$

$\boxed{0, -\frac{7}{5}}$

42. $8b^2-8b=5b^2$ (move)

$3b^2-8b=0$ GCF

$b(3b-8)=0$

$b=0$

$3b-8=0$

$\boxed{0, 8/3}$

43. *(hint: special product!)* $64x^2=49$ (move)

$64x^2-49=0$

sum & diff

$(8x-7)(8x+7)=0$

$8x-7=0$

$8x+7=0$

$\boxed{\frac{7}{8}, -\frac{7}{8}}$

44. *(hint: special product!)* $s^2+16s+64=0$

$(s+8)(s+8)=0$

$s+8=0$

$s=\boxed{-8}$

45. *(hint: special product!)* $y^2=-\frac{22}{5}y-\frac{121}{25}$

$y^2+\frac{22}{5}y+\frac{121}{25}=0$

$\left(y+\frac{11}{5}\right)\left(y+\frac{11}{5}\right)=0$

$y=\boxed{-11/5}$

46. *(hint: special product!)* $z^2-121=0$

Sum & Diff

$(z-11)(z+11)=0$

$\boxed{11, -11}$

47. *(hint: special product!)* $4x^3+72x^2=-324x$

$4x^3+72x^2+324x=0$

$4x(x^2+18x+81)=0$ GCF

$(4x)(x+9)(x+9)=0$

$0 \quad -9 \quad -9$

$\boxed{0, -9}$

48. *(hint: special product!)* $c^3+3c^2=81c+243$

$c^3+3c^2-81c-243=0$

$c^2(c+3)-81(c+3)=0$

$(c^2-81)(c+3)=0$

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

$\boxed{9, -9, -3}$

49. *(hint: special product!)* $2k^3-50k=0$ GCF

$2k(k^2-25)=0$

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

$\boxed{0, -5, 5}$