Worked Problems - Non-Assigned

Text Page 228-229

#1 A single number or the product of a number and one or more variables raised to powers

#2 A single term or a finite sum of terms

#3 It is the highest power of all the terms.

#4 The value of the polynomial when the variable is replaced by #.

#5 Adding like terms

#6 Subtracting like terms

	x^3, x^2
#7	-3, 7
#8	10, -1
#9	0, 6
#10	-1, 0
#11	$\frac{1}{3}$, $\frac{7}{2}$
#12	$\frac{1}{2}$, $-\frac{1}{4}$

#13 Mon, 0

#14 Mon, 0

#15 Mon, 3

#16 Mon, 8

#17 Bin, 1

#18 Bin, 1

#19 Tri, 10

#20 Tri, 6

#21 Bin, 6

#22 Bin, 2

#23 Tri, 3

#24 Tri, 3

#25 $2(-1)^2-3(-1)+1 = +2+3+1 = 6$

#26 $3(-2)^2-(-2)+2 = 16$

#27 $-3(3)^3-(3)^2+3(3)-4 = -85$

#28 $-2(2)^4-3(2)^2+5(2)-9 = -43$

#29 $3(-2)^4-2(-2)^3+7 = 71$

#30 $-2(5)^3+5(5)^2-12 = -137$

#31 $1.2(1.85)^3-4.3(1.85)-2.4 = -4.87665$

#32 $-3.5(-2.36)^4-4.1(-2.36)^2+5.5 = -42.168$

#33 [illegible]

$(x-3)+(3x-5) = x-3+3x-5 = 4x-8$

#34 $(x-2)+(x+3) = x-2+x+3 = 2x+1$

#35 $(q-3)+(q+3) = q-3+q+3 = 2q$

#36 $(q+4)+(q+6) = q+4+q+6 = 2q+10$

#37 $(3x+2)+(x^2+4) = x^2+3x+2$

#38 $(5x^2-2)+(-3x^2-1) = 5x^2-2-3x^2-1 = 2x^2-3$

#39 $(4x-1)+(x^3+5x-6) = 4x-1+x^3+5x-6 = x^3+9x-7$

#40 $3x-7+x^2-4x+6 = x^2+3x-4x-7+6 = x^2-x-1$

#41 $a^2-3a+1+2a^2-4a-5 = a^2+2a^2-3a-4a+1-5 = 3a^2-7a-4$

#42 $w^2-2w+1+2w-5+w^2 = 2w^2-2w+2w+1-5 = 2w^2-4$

#43 $w^2-9w-3+w-4w^2+8 = w^2-4w^2-9w+w-3+8 = -3w^2-8w+5$

#44 $a^3-a^2-5a+6-a-3a^2 = a^3-4a^2-6a+6$

#45 $5.76x^2-3.14x-7.09+3.9x^2+1.21x+5.6 = 9.66x^2-1.93x-1.49$

#46 $8.5x^2+3.27x-9.33+x^2-4.39x-2.32 = 9.5x^2-1.12x-11.65$

#47 $x-2-5x+8 = -4x+6$

#48 $x-7-3x+1 = -2x-6$

#49 $m-2-m-3 = -5$

#50 $m+5-m-9 = -4$

#51 $2z^2-3z-3z^2+5z = -z^2+2z$

#52 $z^2-4z-5z^2+9z = -4z^2-z$

#53 $w^5-w^3+w^4+w^2 = w^5+w^4-w^3-w^2$

#54 $w^6-w^3+w^2+w$

#55 $t^2-3t+4-t^2+5t+9 = 2t+13$

#56 $t^2-6t+7-5t^2+3t+2 = -4t^2-3t+9$

#57 $9-3y-y^2-2-5y+y^2 = -8y+7$

#58 $4-5y+y^3-2+3y+y^2$
$= y^3-y^2-2y+2$

#59 $3.55x-8.79-21.4x-48.8$
$= -21.85x-42.3.2$

#60 $329.56x-342.8-56.6x-433 =$
$272.96x-780.4$

#61 $4a+2$

#62 $3w-5$

#63 $-2x+4$

#64 $2x-6$

#65 $2a$

#66 $2s-7$

#67 $-5m+7$

#68 $-8n+6$

#69 $4x^2+1$

#70 $2x^2+3x-4$

#71 a^3-9a^2+2a+7

#72 $-3b^3+7b^2+4b-7$

#73 $-3x+9$

#74 $-2x^3-x^2+2$

#75 $2y^3+7y^2-4y-14$

#76 $-2q^2-11q+14$

#77 $(2m-9)+(3m+4)=5m-5$

#78 $(-3n-2)+(6m-3)=6m-3n-5$

#79 $(9y-2)-(7y-3)=9y-2-7y+3=2y+1$

#80 $(3y-4)-(-2y-1)=3y-4+2y+1=5y-3$

#81 $(2x^2-x+3)+(x^2+5x-9)-(x^2-3x-1)=2x^2+7x-5$

#82 $(-3y^2-2y+6)+(7y^2+8y-3)-(-2y^2+3y-8)=6y^2+5y+11$

#83 $4m-2+2m+4-9m+1=-3m+3$

#84 $-5m-6+8m-3+5m-3=8m-12$

#85 $6y-2-8y-3-9y+2=-11y-3$

#86 $-5y-1-8y+4-y-3=-14y$

#87 $-x^2-5x+4+6x^2-8x+9-3x^2+7x-1=2x^2-6x+12$

#88 $-8x^2+5x-12-3x^2-9x+18+3x^2+9x-4=-8x^2-13x+10$

#89 $-6z^4-3z^3+7z^2-5z^2-3z^2+2+z^4-z^2+5=-5z^4-8z^3+3z^2+7$

#90 $-v^3-v^2-1-v^4+v^2+v+1+v^3-3v^2+6=-v^4-3v^2+v+6$

email me for solutions

#91 – 106 eaworth@olemiss.edu

#1 $a^m \cdot a^n = a^{m+n}$

#2 It can be a binomial if the terms are unalike.

#3 The distributive property

#4 we use the distributive property twice

#5 we multiply each term of the first by each term in the second.

#6 $-(stuff) \rightarrow$ or change the sign of each term

#7 $27x^5$

#8 $15x^{12}$

#9 $14a^4$

#10 $15y^{27}$

#11 $-30x^4$

#12 $-16x^7$

#13 $27x^{17}$

#14 $16x^8$

#15 $-54s^2t^2$

#16 $-36q^5$

#17 $24t^7w^8$

#18 $54k^3$

#19 $25y^2$

#20 $36x^2$

#21 $4x^6$

#22 $9y^{10}$

#23 $4y^7 - 8y^3$

#24 $6t^8 + 18t^5$

#25 $-18y^2 + 2y$

#26 $-9y^3 + 9y$

#27 $-3y^3 + 5y^2 - 18y$

#28 $7x^5 - 35x^4 - 7x^2$

#29 $-xy^2 + x^3$

#30 $ab^3 - a^3b$

#31 $15a^4b^3 - 5a^5b^2 - 10a^6b$

#32 $24c^3d^3 - 8cd^5 + 8cd^2$

#33 $-2t^5v^3 + 3t^3v^2 + 2t^2v^2$

#34 $2m^3n^5 - m^3n^4 + 4m^2n^3$

#35 $(x+1)(x+2) = x^2 + 2x + x + 2 = x^2 + 3x + 2$

#36 $(x+6)(x+3) = x^2 + 6x + 3x + 18 = x^2 + 9x + 18$

#37 $(x-3)(x+5) = x^2 - 3x + 5x - 15 = x^2 + 2x - 15$

#38 $(y-2)(y+4) = y^2 - 2y + 4y - 8 = y^2 + 2y - 8$

#39 $(t-4)(t-9) = t^2 - 4t - 9t + 36 = t^2 - 13t + 36$

#40 $(w-3)(w-5) = w^2 - 3w - 5w + 15 = w^2 - 8w + 15$

#41 $(x+1)(x^2+2x+2) = x(x^2+2x+2) + 1(x^2+2x+2) =$
$x^3 + 2x^2 + 2x + x^2 + 2x + 2 = x^3 + 3x^2 + 4x + 2$

#42 $(x-1)(x^2+x+1) = x(x^2+x+1) - 1(x^2+x+1)$
$= x^3+x^2+x-x^2-x-1 = x^3-1$

#43 X #44 X #45 $(y^2z-2y^4)(y^2z+3z^2-y^4) =$
$y^2z(y^2z+3z^2-y^4) - 2y^4(y^2z+3z^2-y^4)$
$y^4z^2+3y^2z^3-y^6z-2y^6z-6y^4z^2+2y^8 =$
$2y^8-3y^6z-5y^4z^2+3y^2z^3$

#46 X

#47
$2a-3$
$a+5$
$10a-15$
$2a^2-3a$
$2a^2+7a-15$

#50
$5x+7$
$3x+6$
$30x+42$
$15x^2+21x$
$15x^2+51x+42$

#53
$m-3n$
$2a+b$
$6m-3bn$
$2am-6an$
$2am-6an+mb-3nb$

#48
$2w-6$
$w+5$
$10w-30$
$2w^2-6w$
$2w^2+4w-30$

#51
$5x+2$
$4x-3$
$-15x-6$
$20x^2+8x$
$20x^2-7x-6$

#54
$3x+7$
$a-2b$
$-6bx-14b$
$3ax+7a$
$3ax+7a-6xb-14b$

#49
$7x+30$
$2x+5$
$35x+150$
$14x^2+60x$
$14x^2+95x+150$

#52
$4x+3$
$2x-6$
$-24x-18$
$8x^2+6x$
$8x^2-18x-18$

#55
x^2+3x-2
$x+6$
$6x^2+18x-12$
x^3+3x^2-2x
$x^3+9x^2+16x-12$

#56 $-x^2+3x-5$ times $x-7$

$+7x^2-21x+35$

$-x^3+3x^2-5x$

$-x^3+10x^2-26x+35$

#57 $2a^3-3a^2+4$ times $-2a-3$

$-6a^3+9a^2-12$

$-4a^4+6a^3-8a$

$-4a^4-9a^2-8a-12$

#58 $-3x^2+5x-2$ times $-5x-6$

$18x^2-30x+12$

$15x^3-25x^2+10x$

$15x^3-7x^2-20x+12$

#59 $x-y$ times $x+y$

$xy-y^2$

x^2+xy

x^2-y^2

#60 a^2+b^2 times a^2-b^2

a^4-b^4

#61 x^2-xy+y^2 times $x+y$

$x^2y-xy^2+y^3$

$x^3-x^2y+xy^2$

x^3+y^3

#62 $4w^2+2wv+v^2$ times $2w-v$

$-4w^2v-2wv^2-v^3$

$8w^3+4w^2v+2wv^2$

$8w^3-v^3$

#63 $-3t+4$

#64 $3t+4$

#65 $-3x-y$

#66 $-x+3y$

#67 $3a^2+a-6$

#68 $-3b^2+b+1$

#69 $3v^2+v-6$

#70 $3t^2+t-6$

#71 $-6x^2+27x$

#72 $3x-2$

#73 $-6x^2+27x+2$

#74 $30-12x$

#75 $2-3x+2x-9=-x-7$

#76 $2-3x-2x+9=-5x+11$

#77 $36x^{12}$

#78 $(-3)^2(a^3)^2b^2 = 9a^6b^2$

#78 ~~$-6a^3b^{10}$~~ $9a^6b^2$

#79 $-6a^3b^{10}$

#80 -325^2+x^2

#81 $25x^2+30x+30x+36 = 25x^2+60x+36$

#82 $25x^2-60x+36$

#83 $25x+30x-30x+(-36) = 25x^2-36$

#84 $4x^2-81$

#85 $6x^7-8x^4$

#86 $12a^4b^3-8a^4b^3 = 4a^4b^3$

#87 $m^3+m^2+m-m^2-m-1 = m^3-1$

#88 $a^3-a^2b+ab^2+a^2b-ab^2+b^3 = a^3+b^3$

#89 $3x^3-3x^2-27x-2x^2+2x+18 = 3x^3-3x^2-25x+18$

#90 X #91 X

for questions 92-104 email me for solutions
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#1 The distributive property
#2 First, Outer, Inner, Last
#3 Provide a faster way to multiply two polynomials
#4 Four.

#5 $x^2+4x+2x+8 = x^2+6x+8$
#6 $x^2+3x+3x+15 = x^2+8x+15$
#7 $a^2+2a-3a-6 = a^2-a-6$
#8 $b^2+2b-b-2 = b^2-b-2$
#9 $2x^2-4x-x+2 = 2x^2-5x+2$
#10 $2y^2-4y-5y+10 = 2y^2-9y+10$
#11 $2a^2+2a-3a-3 = 2a^2-a-3$
#12 $3x^2+12x-5x-20 = 3x^2+7a-20$
#13 $w^2-10w-50w+500 = w^2-60w+500$
#14 $w^2-20w-30w+600 = w^2-50w+600$
#15 $y^2+5y-9y+5$ done!
#16 $3a-ay+3t-ty$ done!
#17 $3w+5m-w^2-mw$ done!
#18 $ab+at-bb-bt$ done!
#19 $10m^2+6tm-15tm-9t^2 = 10m^2-9mt-9t^2$
#20 $2x^2+2xy-5xy-5y^2 = 2x^2-3xy-5y^2$
#21 $45a^2+35ab+18ab+14b^2 = 45a^2+53ab+14b^2$
#22 $11x^2+44xy+3xy+12y^2 = 11x^2+47xy+12y^2$

#23 $x^4-2x^2-5x^2-10 = x^4-7x^2-10$
#24 $y^4-2y^2+y^2-2 = y^4-y^2-2$

#25 $h^6+3h^3+5h^3+25 = h^6+10h^3+25$

#26 $y^{12}-4y^6+y^6-4 = y^{12}-3y^6-4$

#27 $3b^6+12b^3+2b^3+8 = 3b^6+14b^3+8$

#28 $5n^8+15n^4-n^4-3 = 5n^8+14n^4-3$

#29 y^3-2y^2-3y+6 = done!

#30 x^3-x^2-x+1 done!

#31 $6m^6+9m^3n^2-2m^3n^2-3n^4 = 6m^6+7m^3n^2-3n^4$

#32 $36y^8-18y^4z^2-12y^4z^2+6z^2 = 36y^8-7m^3n^2-3n^4$

#33 $12u^2v+18u^2v-8u^2v-12 = 12u^4v^2+10u^2v-12$

#34 $10y^6w^4+15y^3w^2z+2y^2w^2z+3z^2 = 10y^6w^4+17y^3w^2z+3z^2$

#35 $b^2+9b+20$

#36 $y^2+12y+32$

#37 $x^2+6x-27$

#38 m^2-m-56

#39 $a^2+10a+25$

#40 $t^2-8t+16$

#41 $4x^2-4x+1$

#42 $9y^2+24y+16$

#43 z^2-100

#44 $9h^2-25$

#45 $a^2+2ab+b^2$

#46 $x^2-2xy+y^2$

#47 $a^2-3ab+2b^2$

#48 $b^2-9bc+8c^2$

#49 $2x^2+5xy-3y^2$

#50 $3y^2-4yz-15z^2$

#51 $5t^2-7t+2$

#52 $4t^2-8t+3$

#53 $h^2-16h+63$

#54 $h^2-14hw+49w^2$

#55 $h^2+14hw+49w^2$

#56 h^2-49g^2

#57 $4h^4-4h^2+1$

#58 $9h^4+6h^2+1$

#59 $8a^2-a+2a-\frac{1}{4} = 8a^2+a-\frac{1}{4}$

#60 X

#61 $\frac{1}{8}x^2+\frac{1}{4}x-\frac{1}{12}x-\frac{1}{6} = \frac{1}{8}x^2+\frac{2}{12}x-\frac{1}{6}$

#62 $\frac{2}{6}t^2-\frac{2}{6}t-\frac{1}{8}t+\frac{1}{8}$

$= \frac{1}{3}t^2-\frac{2}{24}t-\frac{3}{24}t+\frac{1}{8} = \frac{1}{3}t^2-\frac{11}{24}t+\frac{1}{8}$

#63 $(-6x^5+2x^4)(2x+5) = -12x^6-26x^5+10x^4$

#64 X

#65 $(x-1)(x+1)(x+3) = (x^2-1)(x+3) = x^3+3x^2-x-3$

#66 $(a^2+a-12)(a-5) = a^3-4a^2-17a+60$

#67 $(9x^2-4)(x+5) = 9x^3+45x^2-4x-20$

#68 X

#69 X

#70 $k^2+5k-36-(k^2+4k-21) = k^2+5k-36-k^2-4k+21 = k-15$

For #71-76 email me for solutions

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#1 $(a+b)^2, (a-b)^2$ & $(a+b)(a-b)$

#2 $(a+b)^2 = a^2+2ab+b^2$

#3 It is even faster.

#4 They sum to zero.

#5 $(a+b)(a-b) = a^2-b^2$ always

#6 By using the distributive property

#7 x^2+2x+1

#8 y^2+4y+4

#9 $y^2+8y+16$

#10 z^2+6z+9

#11 $9x^2+48x+64$

#12 $4m^2+28m+49$

#13 $s^2+2st+t^2$

#14 X

#15 $4x^2+4xy+y^2$

#16 X

#17 $4t^2+12ht+9h^2$

#18 $9z^2+30kz+25k^2$

#19 a^2-6a+9

#20 $w^2-8w+16$

#21 X

#22 $t^2-12t+36$

#23 $9t^2-12t+4$

#24 $25a^2-60a+31$

#25 $s^2-2st+t^2$

#26 $r^2-2rw+w^2$

#27 $9a^2-6ab+b^2$

#28 $16w^2-56w+49$

#29 $9z^2-30yz+25y^2$

#30 $4z^2-12wz+9w^2$

#31 a^2-25

#32 x^2-36

#33 y^2-1

#34 p^2-4

#35 X

#36 $36x^2-y$

#37 r^2-s^2

#38 b^2-y^2

#39 $64y^2-9a^2$

#40 $16u^2-81v^2$

#41 X

#42 X

#43 $(x+1)(x^2+2x+1) = x^3+3x^2+3x+1$

#44 $(y-1)(y^2-2y+1) = y^3-3y^2+3y-1$

#45 $(2a-3)(4a^2-12a+9) = 8a^3-36a^2+54a-27$

#46 $(3w-1)(9w^2-6w+1) = 27w^3-27w^2+9w-1$

#47 $(a^2-6a+9)(a^2-6a-9) = a^4-12a^3+36a^2-108a+81$

#48 $(4b^2+4b+1)(4b^2+4b+1) = 16b^4+32b^3+24b^2+8b+1$

#49 $(a^2+2ab+b^2)(a^2+2ab+b^2) = a^4+4a^3b+6a^2b^2+4ab^3+b^4$

#50 $(4a^2-12ab+9b^2)(4a^2-12ab+9b^2) = 16a^4-96a^3b+216a^2b^2-216ab^3+81b^4$

#51 a^2-400

#52 $1-x^2$

#53 x^2+5x+6

#54 $x^2-4x-45$

#55 $16x^2-1$

#56 $81y^2-1$

#57 $81y^2-18y+1$

#58 $16x^2-8x+1$

#59 $6t^2-7t-20$

#60 $6t^2+7t-20$

#61 $4t^2-20t+25$

#62 $4t^2+20t+25$

#63 $4t^2-25$

#64 $9t^2-16$

#65 x^4-1

#66 y^4-1

#67 $4y^4-36y^3+81$

#68 $9z^8-48z^4+64$

#69 $4x^4+12x^2y^2+9y^4$

#70 $16y^{16}+16y^8w^3+4w^6$

#71 $\frac{1}{4}x^2+\frac{1}{6}x+\frac{1}{6}x+\frac{1}{9} =$
$= \frac{1}{4}x^2+\frac{1}{3}x+\frac{1}{9}$

#72 $\frac{4}{9}y^2-\frac{2}{6}y-\frac{2}{6}y+\frac{1}{4} =$
$= \frac{4}{9}y^2-\frac{4}{3}y+\frac{1}{4}$

#73 $0.04x^2-0.04x+0.01$

#74 $0.01y^2+0.1y+0.25$

#75 $a^3+3a^2b+3ab^2+b^3$

#76 $8a^3-36a^2b+54ab^2-27b^3$

#77 $2.25x^2+11.4x+14.44$

#78 $11.9025a^2-15.87a+5.29$

#79 $12.25t^2-1.25$

#80 $20.25h^2-32.49$

email me for solutions #81-92

#1 The quotient rule

#2 The zero power of a non zero real number is 1

#3 The same number as in the polynomial

#4 In descending order of the exponents

#5 When the degree of the remainder is less than the degree of the divisor

#6 Insert a 0 (zero) term (like $0x^2$) in that place.

#7 1

#8 1

#9 1

#10 1

#11 1

#12 -2

#13 1

#14 1

#15 $\frac{x^8}{x^2} = x^8 \cdot x^{-2} = x^6$

#16 $\frac{y^9}{y^3} = y^9 \cdot y^{-3} = y^6$

#17 $\frac{6a^7}{2a^{12}} = \frac{6}{2}(a^7 \cdot a^{-12}) = 3a^{-5} = \frac{3}{a^5}$

#18 $\frac{30b^2}{3b^6} = 10(b^2 \cdot b^{-6}) = 10b^{-4} = \frac{10}{b^4}$

#19 $-12x^7 \cdot \frac{1}{3}x^{-9} = -4x^{-4} = \frac{-4}{x^{-4}}$

#20 $-6y^7 \cdot \frac{1}{-3}y^{-10} = 2y^{-5} = \frac{2}{y^5}$

#21 $-6y^2/6y = -y$

#22 $\frac{-3a^7b}{3ab} = -a$

#23 $\frac{-6x^3y^2}{2x^2y^2} = -3x$

#24 $\frac{-4h^2k^4}{-2hk^3} = 2hk$

#25 $\frac{-9x^2y^2}{3x^5y^2} = -3x^{-3} = \frac{-3}{x^3}$

#26 $\frac{-12z^4y^2}{-2z^{10}y^2} = 6z^{-6} = \frac{6}{z^{-6}}$

#27 $\frac{3x}{3} - \frac{6}{3} = x - 2$

#28 $\frac{5z}{-5} - \frac{10}{-5} = -y + 2$

#29 $\frac{x^5}{x^2} + \frac{3x^4}{x^2} - \frac{x^3}{x^2} = x^3 + 3x^2 - x$

#30 X

#31 $\frac{-8x^2y^3}{-2xy} - \frac{4x^2y}{2xy} + \frac{2xy^2}{-2xy^2}$

$= 4xy - 2x + 1$

#32 $-3y$ X

#35 $x+3 \overline{)x^2+5x+13}$ Rem 7

$x+2$

x^2+3x

$2x+6$

7

#36 $x+3 \overline{)x^2+3x+6}$ Rem 6

x

x^2+3x

$0+6$

#37 $x+5 \overline{)2x+0}$ Rem -10

2

$2x+10$

-10

#38 $x-1 \overline{)5x+0}$ Rem 5

5

$5x-5$

#39 $a-2 \overline{)a^3+0a^2+3a-3}$ Rem 13

a^2+2a+8

a^3-2a^2

$2a^2+4a$

$2a^2-4a$

$8a-3$

$8a-16$

13

$0a^2 \rightarrow$

#40 $w-2 \overline{)w^3+2w^2+0w-3}$ Rem 13

w^2+4w+8

w^3-2w^2

$4w^2+0w$

$4w^2-8w$

$8w-3$

$8w-16$

13

#41 $x+1 \overline{)x^2-3x+0}$ Rem 4

$x-4$

x^2+x

$-4x+0$

$-4x-4$

4

#42 $x+1 \overline{)3x^2+0x+0}$ Rem 3

$3x-3$

$3x^2+3x$

$-3x+0$

$-3x-3$

3

#43 $h-3 \overline{)h^3+0h^2+0h-27}$ Rem 0

h^2+3h+9

h^3-3h^2

$3h^2+0h$

$3h^2-9h$

$9h-27$

$9h-27$

0

#44 $w+1 \overline{)w^3+0w^2+0w+1}$ Rem 0

w^2-w+1

w^3+w^2

$-w^2+0$

$-w^2+w$

$w+1$

$w+1$

0

#45 $3x-2 \overline{)6x^2-13x+7}$ $2x-3$ Rem 1
$6x^2-4x$
$-9x+7$
$-9x+6$
1

#46 $4b+1 \overline{)4b^2+2b-3}$ $b+b$ Rem -1
$4b^2+b$
$2b-3$
$2b+b$
-9

#47 X

#48 X

#49 $x-3 \overline{)3x}$ $3+\frac{15}{x-5}$
$3x-15$
15

#50 $x-1 \overline{)2x+0}$ $2+\frac{2}{x-1}$
$2x-2$
2

#51 $x+3 \overline{)-x+0}$ $-1+\frac{3}{x+3}$
$-x-3$
$+3$

#52 $x-1 \overline{)-3x}$ $-3+\frac{-3}{x-1}$
$-3x+3$
-3

#53 $x \overline{)x-1}$ $1-\frac{1}{x}$
$x+0$
-1

#54 $a \overline{)a-5}$ $1-\frac{5}{a}$
$a+0$
-5

#55 $x \overline{)3x+1}$ $3+\frac{1}{x}$
$3x+0$
1

#56 $y \overline{)2y+1}$ $2+\frac{1}{y}$
$2y+0$
1

#57 $x+1 \overline{)x^2+0x+0}$ $x-1+\frac{1}{x+1}$
x^2+x
$-x$
$-x-1$
1

#58 $x-1 \overline{)x^2+0x+0}$ $x+1+\frac{1}{x-1}$
x^2-x
$x+0$
$x-1$
1

#59 $x+2 \overline{)x^2+0x+4}$ $x-2+\frac{8}{x+2}$
x^2+2x
$-2x+4$
$-2x-4$
8

#60 $x-1 \overline{)x^2+0x+1}$ $x+1+\frac{2}{x-1}$
x^2-x
$x+1$
$x-1$
2

#61 $x-2 \overline{)x^3+0x^2+0x+0}$ $x^2+2x+4+\frac{8}{x-2}$
x^3-2x^2
$2x^2+0x$
$2x^2-4x$
$4x+0$
$4x-8$
8

#62 $x+1 \overline{)x^3+0x^2+0x+1}$ x^2-x+1
x^3+x^2
$-x^2+0x$
$-x^2-x$
$x+1$
$x+1$
-2

-2 Remainder

#63 $x \overline{)x^3+0x^2+0x+3}$ x^2+0x+0
x^3+0x
$0x^2+0x$
$0x^2+0x$
$0+3$
$0+0$
3

$x^2+\frac{3}{x}$

#64 $2x \overline{)2x^2+0x+4}$ → $x+0$; $2x^2$; $0x$; $0x$; $0+4$

$x + \frac{4}{2x} = x + \frac{2}{x}$

#65 $\frac{-6a^3b}{2a^2b} = -3a$

#66 $\frac{-14x^7}{-7x^2} = 2x^5$

#67 $\frac{-8w^4t^7}{-2w^2t^3} = \frac{4t^4}{w^5}$

#68 $\frac{-9y^7z^4}{3y^3z^{11}} = \frac{-3y^4}{z^7}$

#69 $\frac{3a-12}{-3} = \frac{3a}{-3}$

#70 $-3z \overline{)3z^2-6z}$ → $-z+2$; $-3z^2$; $0-6z$; $-6z$

#71 $3x \overline{)3x^2-9x}$ → $x-3$; $3x^2$; $0-9x$; $-9x$

#72 $5x \overline{)5x^3+15x^2-25x}$ → x^2+3x-5; $5x^3$; $0+15x^2$; $15x^2$; $0-25x$; $-25x$

#73 $-2x^2 \overline{)12x^4-4x^3+6x^2}$ → $-6x^2+2x-3$; $12x^4$; $0-4x^3$; $-4x^3$; $0+6x^2$; $0x^2$; 0

#74 $-3x \overline{)-9x^3+3x^2-15x}$ → $3x^2-x+5$; $-9x^3$; $0+3x^2$; $+3x^2$; $0-15x$; $-15x$; 0

#75
$$t-9 \overline{)\, t^2-5t-36} \quad (t+4)$$
t^2-9t
$4t-36$
$4t-36$
0

#76
$$b-5 \overline{)\, b^2+2b-35} \quad (b+7)$$
b^2-5b
$0+7b-35$

#77
$$3w-5 \overline{)\, 6w^2-7w-5} \quad (2w+1)$$
$6w^2-10w$
$3w-5$

#78
$$4z-1 \overline{)\, 4z^2+23z-6} \quad (z+6)$$
$4z^2-z$
$24z-6$
$24z-6$
0

#79
$$2x+3 \overline{)\, 8x^3+0x^2+0x+27} \quad (4x^2-6x+9)$$
$8x^3+12x^2$
$-12x^2+0x$
$-12x^2-18x$
$18x+27$
$18x+27$

#80
$$2y-1 \overline{)\, 8y^3+0y^2+0y-1} \quad (4y^2+2y+1)$$
$8y^3-4y^2$
$4y^2+0y$
$4y^2-2y$
$2y-1$
$2y-1$
0

#81 ? Quiz maybe?

#82 X

#83 X

#84 final maybe?

email me for Q 86 - 89 for solutions

#1 It says $a^m a^n = a^{m+n}$

#2 $\frac{a^m}{a^n} = a^{m-n}$ if $m > n$ and $\frac{a^m}{a^n} = \frac{1}{a^{n-m}}$ if $n > m$ or $m-n$ and if it's neg, then it's on the 'bottom'

#3 They don't make sure otherwise

#4 $(a^m)^n = a^{mn}$

#5 $(ab)^n = a^n b^n$

#6 $\longrightarrow \left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$

#7 $4 \cdot 32 = 128$

#8 x^{13}

#9 $6u^{10}$

#10 $-18r^6$

#11 $a^4 b^{10}$

#12 $= x^2y \cdot x^3y^6(1) = x^5y^7$

#13 $\frac{-1}{2a^4}$

#14 $-\frac{1}{2t^9}$

#15 X #16 X

#17 $8 \cdot 25 = 200$

#18 $4 \cdot 1000 = 4000$

#19 x^6

#20 y^8

#21 $2x^{12}$

#22 $3y^{17}$

#23 $\frac{1}{r^2}$

#24 $\frac{1}{r^7}$

#25 $\frac{3x(x^{10})}{6x^3(x^8)} = \frac{3x^4}{6x^{11}} = \frac{1}{2}$

#26 $\frac{5y^3(y^{10})}{10y^5(y^{12})} = \frac{5y^{13}}{10y^{17}} = \frac{1}{2}y^4$

#27 x^3y^6

#28 w^6y^{12}

#29 $-8t^{15}$

#30 $-27r^9$

#31 $-8x^6y^{15}$

#32 $-27y^6z^9$

#33 $a^9b^2c^{14}$

#34 $\frac{26^6c^9}{a^7}$

#35 $\frac{x^{12}}{64}$

#36 $\frac{1^6}{8}$

#37 $\frac{16g^8}{b^{12}}$

#38 $\frac{81r^6}{t^4}$

#39 $-\frac{x^6}{8y^3}$

#40 $\frac{81y^{24}}{16z^4}$

#41 X #42 X

#43 $9 + 36 = 45$

#44 $(2)^2 = 4$

#45 $(9)^2 = 81$

#46 $25 - 9 = 16$

#47 $8 - 27 = -19$

#48 $27 + 64 = 91$

#49 $(-1)^3 = -1$

#50 $7^3 = 343$

#51 $\left(\frac{2^3}{5^3}\right) = \frac{8}{125}$

#52 $\left(\frac{2^3}{4^3}\right) = \frac{27}{64}$

#53 $25 \cdot 8 = 200$

#54 $100 \cdot 27 = 27000$

#55 $8 \cdot 16 = 128$

#56 $100 \cdot 10000 = 1,000,000$

#57 $\left(\frac{2^6}{2^{10}}\right) = \left(\frac{1}{2^4}\right) = \frac{1}{16}$

#58 $\left(\frac{3^2}{3^6}\right) = \left(\frac{1}{3^4}\right) = \frac{1}{81}$

#59 $15x^{11}$

#60 $-6y^4$

#61 $-125x^{12}$

#63 $64z^9$

#64 $4a^{13}b^7$

#65 X

#66 $-4a$

#67 X

#68 $-a^3b^3(81b^4a^8) = -81a^{11}b^7$

#69 $\frac{8x^6}{x^{12}} = \frac{8}{x^6}$

#70 $\frac{9y^{16}}{y^{10}} = 9y^6$

#71 $\left(\frac{-2a^3b^4}{c^5}\right)^5 = \frac{-32a^{15}b^{20}}{c^{25}}$

#72 $\left(\frac{-2c}{b^4}\right)^5 = \frac{-32c^5}{b^{20}}$

#73 $\left(\frac{y}{2x}\right)^5 = \frac{y^5}{32x^5}$

#74 $(z^2)^5 = z^{10}$

for 75 - 78 email me for solutions
enswurth@oy.edu

these ends week 1 of covered material
5.7 & 9.1 will be in the next set...