Quiz Solutions:

1. $7x^3+8x^2-6x-7$
2. $7x^3+2x^2-2x+1$
3. $-15x^4+22x^3+12x^2-16x$
4. Q: $3x-5$; R: 9
5. $f(-2)=-4$

5.6
Special Factoring

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

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

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

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

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

5.6

12. a^2b^2-25

$(ab)^2-5^2$

$(ab-5)(ab+5)$

42. $64a^3+27$

$(4a)^3+3^3$

$(4a+3)(16a^2-12a+9)$

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

x^3+y^3

$x=4a;\ y=3$

$(x+y)(x^2-xy+y^2)$

16. $4x^2y^2+12xy+9$

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

$(2xy)^2+2(2xy)(3)+3^2=(2xy+3)^2$

22. $b^2-18b+81$

$=(b-9)^2$

48. $1-125b^3$

$1^3-(5b)^3$

$(1-5b)(1^2+(1)(5b)+(5b)^2)$

$(1-5b)(1+5b+25b^2)$

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

54. $27x^3-8y^3=(3x)^3-(2y)^3$

$(3x-2y)(9x^2+6xy+4y^2)$

58. $a^3+(a+b)^3$

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

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

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

60. $x^{3n}+y^{3n}$

$(x^n)^3+(y^n)^3$

$(x^n+y^n)(x^{2n}-x^ny^n+y^{2n})$

86. $3x^4-81x=3x(x^3-27)$

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

102. $4x^3+8x^2-9x-18$

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

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

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

108. $8x^4 - 40x^3 + 50x^2$

$2x^2(4x^2 - 20x + 25)$

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

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

120. $24a^2b^2 - 14ab^3 - 90b^4$

$2b^2(12a^2 - 7ab - 45b^2)$

$2b^2(12a^2 - 27ab + 20ab - 45b^2)$ $12(-45)$

$2b^2[3a(4a-9b) + 5b(4a-9b)]$ $3\cdot4\cdot9\cdot5$

$2b^2(4a-9b)(3a+5b)$ $3\cdot2\cdot2\cdot3\cdot3\cdot5$

126. $4x^4 - x^2 - 4x^2y^2 + y^2$

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

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

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

128. $x^6y^3 + x^3 - x^3y^3 - 1$

$x^3(x^3y^3+1) - 1(x^3y^3+1)$

$(x^3y^3+1)(x^3-1)$

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

80. $3x^4 + 20x^2 + 32$

$3 \cdot 32$

$3 \cdot 4 \cdot 8$

$3x^4 + 12x^2 + 8x^2 + 32$

$3x^2(x^2+4) + 8(x^2+4)$

$(x^2+4)(3x^2+8)$

132. $3b^{n+2} + 4b^{n+1} - 4b^n$

$b^n(3b^2 + 4b - 4)$

$3(-4) = -12$
$= 6(-2)$

$b^n(3b^2 + 6b - 2b - 4)$

$b^n[3b(b+2) - 2(b+2)]$

$b^n(b+2)(3b-2)$

5.6
#3-131
odd