SOLUTIONS

Math 71 Spring 2006 QUIZ #5 @ 15 points Name:

Write in a neat and organized fashion. You should use a pencil. For an exercise to be complete there needs to be a detailed solution to the problem. Do not just write down an answer. No proof, no credit given.

1. Factor each polynomial completely.

a) $15x^3-25x^2+10x =$

$= 5x(3x^2-5x+2)$

$= \boxed{5x(3x-2)(x-1)}$

check: $(3x-2)(x-1) = 3x^2-3x-2x+2$

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

b) $x^3-6x^2-x+6 =$

$= x^2(x-6)-(x-6)$

$= (x-6)(x^2-1)$

$= \boxed{(x-6)(x-1)(x+1)}$

c) $8x^2+8y^2 = \boxed{8(x^2+y^2)}$

d) $x^2-0.5x+0.06 =$

$= \boxed{(x-0.2)(x-0.3)}$

product $= 0.06$ $\begin{matrix} -0.2 \\ -0.3 \end{matrix}$

sum $= -0.5$

$0.06 = (0.2)(0.3)$

e) $3x^{3m}y^m-6x^{2m}y^{2m} =$

$= \boxed{3x^{2m}y^m(x^m-2y^m)}$

f) $125x^3-8 =$

$= (5x)^3-2^3$

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

$= \boxed{(5x-2)(25x^2+10x+4)}$

g) $2x^6+11x^3+15 = 2t^2+11t+15 = 2t^2+6t+5t+15$

let $x^3=t$

then $(x^3)^2=t^2$

$x^6=t^2$

product $= 2(15)=30 < \begin{matrix} +6 \\ +5 \end{matrix}$

sum $= 11$

$30 = 6 \cdot 5$

$= 2t(t+3)+5(t+3)$

$= (t+3)(2t+5)$

$= \boxed{(x^3+3)(2x^3+5)}$