| | 11/1/11/2001 |
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| | HW #10 Solutions |
| \$ 23 #14. | Show that f(x)= x2+8x-2 is irreducible over Q. Is f(x) irreducible |
| matematika di makat ilaka suu hin ka kilja matsunoo, dalab sagu putaksa koopinis kilika salah | over R? Over C? |
| inkalaktura, pii ili ja kunnalarunja rakalarunnii usus utavan aji isaa urega kaasini aji ili ku | Let p=2. Then p18 and p1-2. However, p11 and p21-2, |
| | By Eigenstein's Criterion, F(X) is irreducible over Q. |
| a China di China and Aliga a cha chi china di Santa di Santa da Santa da Santa di Santa di Santa di Santa di S | However, F(x) is reducible over IR. The anadratic formula gives |
| т Ф «Мійстий» сам ставательства на ставляющих и пред на пред применення вы | However, F(X) is reducible over IR. The quadratic formula gives 2 real roots of F(X), Also, F(0) = -2, F(1) = 7, and F(X) is |
| accorde Heaven allegate challegate Challegate Challegate Challegate and the challegate and challegate and the challegate and c | continuous, so by the Intermediate Value Theorem From Calculus, |
| | frusthave a real root in the interval (0,1). |
| | Since FW is reducible over R, it is also reducible over C. |
| | |
| 16. | Demonstrate that x3+3x2-8 is irreducible over Q. |
| | Let $f(x) = x^3 + 3x^2 - 8$ and let $g(x) = f(x+2)$. Then |
| | Let $f(x) = x^3 + 3x^2 - 8$ and let $g(x) = f(x+2)$. Then $g(x) = (x+2)^3 + 3(x+2)^2 - 8 = (x^3 + 6x^2 + 12x + 8) + (3x^2 + 12x + 12) - 8$ |
| Walter Commission and State of | $= x^3 + 9x^2 + 24x + 12$ |
| or was also distributed in the forest and with a cover speciment in the constraint of the constraint of the cover of the c | let p=3. Then p19, p124, and p112, but p11 and p2/12. |
| | By Eisenstein's Criterion, glx) is irreducible, Therefore, f(x) is |
| inn gast attädelen om to sik sän 4 säätat sen over olipenspiele sekkelop olippost, sen en sammet sik säke | irreducible as well. |
| | |
| 20. | Determine whether the polynomial in alx I satisfies an Eisenstein |
| | (riterion for irreducibility over Q. |
| | $4x^{2}-9x^{3}+24x-18$ |
| | The only prime that divides -9,24, and -10 is p=3. However, $p^2 \mid -10$. Thus, the polynomial does not satisfy any Eisenstein |
| | p2 -10. Thus, the polynomial does not satisfy any Eigenstein |
| an aggi i nyakhnakhnakhnakhnakhnakhnakhnakhnakhnakhn | criterion. |
| | |
| W. | Find all irreducible polynomials of the indicated degree in the given |
| 1 | nng. |
| | Vegree 3 in CalX |
| | A polynomial of degree 3 is irreducible it and only it it has no roots. The only obynomials of degree 3 in CrIXI with no roots are x3+x+1 and. |
|) | obycomials of degree 3 in Crlx with no roots are x3+x+1 and |
| and the same of th | 3+2+1 |
| | |