

Name _____
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Date _____
Pre Calculus

Unit 1 Review Sheet

Prove the following identities

1. $(x+2)^2 + 2(x+2) - 8 = (x+6)x$

2. $m^5 + m^3 - 6m = m(m^2 + 3)(m^2 - 2)$

3. Solve for m and p : $(x-m)(px+3) = 2x^2 - 9x - 18$

4. Solve for h and k : $3x^3 - 8x^2 + 13 = (3x^2 + hx - 4)(x - 2) + k$

Divide the following polynomials

5. $\frac{2x^3 + 5x^2 - 31x - 84}{x + 3}$

6. $\frac{4x^3 + 12x^2 - 5}{x + 5}$

7. $\frac{2x^3 - 3x^2 + 2x + 5}{x - 5}$

8. $\frac{9x^2 - 2}{3x + 1}$

Factor the following polynomial expressions

9. $x^3 - 3x^2 + 2x + 4x^2 - 12x + 8$

10. $3x^3 + x^2 - 12x^2 - 4x - 63x - 21$

11. $6x^2 + 13x + 5$

12. $3y^2 + 4y + 1$