

MATH 103
SPRING 2012
EXAM 2

NAME:

1. 10 pts. Add $(2u^3 - 11u - 1) + (4u^3 - 5u + 6)$

2. 10 pts. Subtract $4t^2 - 3t$ from $2t^3 - 9t^2 - 11t$

3. 10 pts. each Find each product.

(a) $(2r + 7)(3r - 1)$

(b) $(4p - 3q)^2$

(c) $(2w - 3)(3w^2 - 5w - 2)$

4. 10 pts. each Divide by long division.

(a) $\frac{x^2 + 11x + 16}{x + 8}$

(b) $\frac{4z^4 + 8z^3 + 3z - 1}{z^2 - z + 2}$

5. 10 pts. each Factor out the greatest common factor, simplifying the factors if possible.

(a) $24m^3 - 16m$

(b) $15y^3z^3 + 27y^2z^4 - 36yz^5$

6. 10 pts. each Factor by grouping.

(a) $mx + qx + my + qy$

(b) $2a^3 + a^2 - 14a - 7$

7. 10 pts. each Factor each fully.

(a) $8k^2 + 34k + 35$

(b) $-12c^2 - 10c + 42$

(c) $64h^4 - 4r^4$

(d) $125x^3 - 216$

(e) $(2v + n)^2 - (2v - n)^2$

8. 10 pts. each Solve each equation by factoring.

(a) $2x^2 - 12 - 4x = x^2 - 3x$

(b) $(y + 8)(y - 2) = -21$

(c) $z^3 - 6z^2 = -8z$

FORMULAS:

$$A^3 + B^3 = (A + B)(A^2 - AB + B^2)$$

$$A^3 - B^3 = (A - B)(A^2 + AB + B^2)$$