

MATH 103
FALL 2012
EXAM 2

NAME:

1. 10 pts. Add $(q^4 - 2q^2 + 10) + (3q^4 + 5q^2 - 5)$
2. 10 pts. Subtract $-3y^2 + 5y - 9$ from $4y^2 - 6y - 7$.
3. 10 pts. each Find each product.
 - (a) $4w^2(-7w^4)$
 - (b) $(6c - d)(2c + 3d)$
 - (c) $(3z - 4)(4z^2 + 5z - 6)$
4. 10 pts. each Divide by long division.
 - (a) $\frac{x^3 + 3x^2 - 4}{x + 2}$
 - (b) $(3t^4 + 5t^3 - 8t^2 - 13t + 2) \div (t^2 - 5)$
5. 10 pts. each Factor out the greatest common factor, simplifying the factors if possible.
 - (a) $10m^5 - 8m^3 - 4m^2$
 - (b) $2(5 - x)^3 - 3(5 - x)^2$
6. 10 pts. Factor $2xy + 3y + 2x + 3$ by grouping.
7. 10 pts. each Factor each fully.
 - (a) $n^2 - 3nq - 15q^2$
 - (b) $13r^3 + 39r^2 - 52r$
 - (c) $16 - (a + 3z)^2$
 - (d) $8v^3 + 1$
 - (e) $u^3 + u^2 - w^3 - w^2$
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:

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

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