

MATH 103
FALL 2013
EXAM 2

NAME:

1. 10 pts. Add $(q^4 - 2q^2 + 10) + (3q^4 + 5q^2 - 5)$
2. 10 pts. Subtract $-3w^2 + 5w - 9$ from $4w^2 + 6w - 7$.
3. 10 pts. each Find each product.
 - (a) $5u^3z^4(-4u^2z^5)$
 - (b) $2\beta^5(\beta - 8)(\beta + 3)$
 - (c) $(t - 4)^3$
4. 10 pts. each Divide by long division.
 - (a) $\frac{x^3 + 3x^2 - 4}{x + 3}$
 - (b) $(8v^4 + 6v^3 + 12v - 32) \div (4v^2 + 3v - 8)$
5. 10 pts. each Factor out the greatest common factor, simplifying the factors if possible.
 - (a) $10r^5 - 2r^3 - 4r^4$
 - (b) $2(5 - x)^3 - 3(5 - x)^2$
6. 10 pts. Factor $4 + st - 2t - 2s$ by grouping.
7. 10 pts. each Factor each fully.
 - (a) $2a^2 - 7a - 4$
 - (b) $4k^2 + 28kr + 49r^2$
 - (c) $49z^2 - 16$
 - (d) $250y^3 + 16q^3$
 - (e) $48c^4 - 243$
8. 10 pts. each Solve each equation by factoring.
 - (a) $2x^2 = 3 - x$
 - (b) $3z^2 = 27z$
 - (c) $6t^3 - 13t^2 - 5t = 0$

FORMULAS:

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

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