

Name _____ Date _____

Factoring Practice

Factor the polynomial completely. Always check for GCF first.

1. $x^2 - 4x - 21$ $(x - 7)(x + 3)$	2. $4x^2 + 9x + 2$ $(4x + 1)(x + 2)$
3. $4x^2 - 81$ $(2x - 9)(2x + 9)$	4. $9x^2 - 12x + 4$ $(3x - 2)^2$
5. $x^3 - x^2 - 12x$ $x(x + 3)(x - 4)$	6. $9p^7 - 36p^5$ $9p^5(p - 2)(p + 2)$

7. $6x^3 + 21x^2 - 12x$

$$3x(x+4)(2x-1)$$

8. $3q^6 - 17q^5 - 28q^4$

$$q^4(3q+4)(q-7)$$

9. $n^4 + 11n^2 + 28$

$$(n^2+7)(n^2+4)$$

10. $y^4 - 16$

$$(y^2+4)(y+2)(y-2)$$

Solve using the quadratic formula. Simplify your radicals.

11. $5x^2 + 9 = 4x + 5$

$$x = \frac{2}{5} \pm \frac{4}{5}i$$

12. $9x^2 - 11 = 6x$

$$x = \frac{1}{3} \pm \frac{2\sqrt{3}}{3}$$