Algebra 1X
Quiz REVIEW: Sections 9.2—9.6
Factoring and Solving Polynomials

Name: Answer Key
Period: **Date:**
Score: **/ 10 Points**

Factor each polynomial completely.

1. $3p^2q^2 + 6pq$

$3pq(pq+2)$

2. $16x^2 - 9$

$(4x)^2 - (3)^2$

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

3. $x^2 - x - 12$

$x \quad 3$
$x \quad -4$

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

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

4. $3a^2 + 30a + 63$

$3(a^2 + 10a + 21)$

$a \quad 7$
$a \quad 3$

$7a$
$(+)\ 3a$
$10a$

$3(a+7)(a+3)$

5. $2t^2 - 11t + 15$

$2t \quad -5$
$t \quad -3$

$-5t$
$(+)\ -6t$
$-11t$

$(2t-5)(t-3)$

6. $4h^2 + 8h - 5$

$2h \quad 5$
$2h \quad -1$

$10h$
$(+)\ -2h$
$8h$

$(2h+5)(2h-1)$

7. $12x^2 - 60x + 75$

$3(4x^2 - 20x + 25)$

$2x \quad -5$
$2x \quad -5$

$-10x$
$(+)\ -10x$
$-20x$

$3(2x-5)^2$

8. $9x^2 - 3xy + 6x - 2y$

$(9x^2 - 3xy) + (6x - 2y)$

$3x(3x-y) + 2(3x-y)$

$(3x+2)(3x-y)$

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

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

$4x[(x^3 + 2x^2) + (-x - 2)]$

$4x[x^2(x+2) - 1(x+2)]$

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

$(x)^2 - (1)^2$

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

Solve each equation.

10. $3a^2 = 6a$

$-6a \quad -6a$

$3a^2 - 6a = 0$

$3a(a-2) = 0$

$\frac{3a}{3} = \frac{0}{3}$ $\qquad$ $a - 2 = 0$
$\qquad\qquad +2 \quad +2$

$a = 0$ $\qquad$ $a = 2$

$a = 0, 2$

11. $3n^2 - 7n = -2$

$+2 \quad +2$

$3n^2 - 7n + 2 = 0$

$3n \quad -1$
$n \quad -2$

$-1n$
$(+)\ -6n$
$-7n$

$(3n-1)(n-2) = 0$

$3n - 1 = 0$ $\qquad$ $n - 2 = 0$
$+1 \quad +1$ $\qquad$ $+2 \quad +2$

$\frac{3n}{3} = \frac{1}{3}$ $\qquad$ $n = 2$

$n = \frac{1}{3}, 2$

12. $(3h-2)^2 = 4$

$\sqrt{(3h-2)^2} = \sqrt{4}$

$3h - 2 = \pm 2$

$3h - 2 = -2$ $\qquad$ $3h - 2 = 2$
$+2 \quad +2$ $\qquad$ $+2 \quad +2$

$\frac{3h}{3} = \frac{0}{3}$ $\qquad$ $\frac{3h}{3} = \frac{4}{3}$

$h = 0$ $\qquad$ $h = \frac{4}{3}$

$h = 0, \frac{4}{3}$