Chapter 8 Review #1

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

1. $4r + 3 - 9r^2 + 7r$

   $\boxed{-9r^2 + 11r + 3}$

   $\boxed{\text{quadratic binomial}}$

2. $3 + 8t^2$

   $= \boxed{8t^2 + 3}$

   $\boxed{\text{quadratic binomial}}$

3. $7x^2 + 8 + 6x - 7x^2$

   $= \boxed{6x + 8}$

   $\boxed{\text{linear binomial}}$

Simplify. Write each answer in standard form.

4. $(4h^3 + 3h + 1) - (-5h^2 + 6h - 2)$

   $= 4h^3 + 3h + 1 + 5h^2 - 6h + 2$

   $= \boxed{4h^3 + 5h^2 - 3h + 3}$

5. $(8z^3 - 3z^2 - 7) - (z^3 - z^2 + 9)$

   $= 8z^3 - 3z^2 - 7 - z^3 + z^2 - 9$

   $= \boxed{7z^3 - 2z^2 - 16}$

Simplify each product. Write in standard form.

6. $5k(3 - 4k)$

   $= 15k - 20k^2$

   $= \boxed{-20k^2 + 15k}$

7. $6g^2(g - 8)$

   $= \boxed{6g^3 - 48g^2}$

8. $-2n^2(5n - 9 + 4n^2)$

   $= -10n^3 + 18n^2 - 8n^4$

   $= \boxed{-8n^4 - 10n^3 + 18n^2}$

Factor out the GCF from each polynomial.

9. $12p^4 + 16p^3 + 8p$

   $= \boxed{4p(3p^3 + 4p^2 + 2)}$

10. $45c^5 - 63c^3 + 27c$

    $= \boxed{9c(5c^4 - 7c^2 + 3)}$

11. $3t^4 - 6t^3 - 9t + 12$

    $= \boxed{3(t^4 - 2t^3 - 3t + 4)}$

Simplify each product. Write in standard form.

12. $(w + 1)(w + 12)$	13. $(3r - 2)^2$
$= \boxed{w^2 + 13w + 12}$	$= \boxed{9r^2 - 12r + 4}$

14. $(7q + 2)(3q - 8)$	15. $(7h - 3)(7h + 3)$
$= \boxed{21q^2 - 50q - 16}$	$= \boxed{49h^2 - 9}$

16. $(4a - 7)(8a - 3)$	17. $(4y + 5)(7y^2 - 4y + 3)$
$= \boxed{32a^2 - 68a + 21}$	$= \boxed{28y^3 + 19y^2 - 8y + 15}$

18. A rectangular classroom has length $3x + 5$ and width $x + 7$. What is the area of the classroom? $\boxed{3x^2 + 26x + 35}$	19. A rectangular campground has length $4x + 7$ and width $3x - 2$. What is the area of the campground? $\boxed{12x^2 + 13x - 14}$