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## Algebra 2 Assignment 17

Determine if the expression is a polynomial, then state the degree.

p264

19.  $y^3 + 3$  yes, degree = 3

21.  $\frac{3k^2}{2} + \frac{4k^7}{5}$  yes, degree = 7

23.  $x\sqrt{3} + 8x^2y^4$  yes, degree = 6

Simplify

25.  $(z^2 - 6z - 10) + (2z^2 + 4z - 11) = \boxed{3z^2 - 2z - 21}$

27.  $(3m^2 + 5m - 6) + (7m^2 - 9) = \boxed{10m^2 + 5m - 15}$

29.  $(8r^2 + 5r + 14) - (7r^2 + 6r + 8)$   
 $= 8r^2 + 5r + 14 - 7r^2 - 6r - 8 = \boxed{r^2 - r + 6}$

31.  $4f(gf - bh) = \boxed{4gf^2 - 4fbh}$

33.  $-5mn^2(-3m^2n + 6m^3n - 3m^4n^4)$   
 $= \boxed{15m^3n^3 - 30m^4n^3 + 15m^5n^6}$

35.  $(4x^2 - 3y^2 + 5xy) - (8xy + 6x^2 + 3y^2)$   
 $= 4x^2 - 3y^2 + 5xy - 8xy - 6x^2 - 3y^2 = \boxed{-2x^2 - 6y^2 - 3xy}$

37.  $4(7m - 3n) = \boxed{(28m - 12n) \text{ feet}}$

39.  $(q - 7)(q + 5) = q^2 + 5q - 7q - 35 = \boxed{q^2 - 2q - 35}$

41.  $(5 - r)(5 + r) = 25 + 5r - 5r - r^2 = \boxed{25 - r^2}$

43.  $(3y - 8)(2y + 7) = 6y^2 + 21y - 16y - 56 = \boxed{6y^2 + 5y - 56}$

45.  $g^{-3y}(g^5 - 2g^3 + g^{-1}) = g^{5-3} - 2g^{3-3} + g^{-1-3} = \boxed{g^2 - 2 + \frac{1}{g^4}}$

47.  $(y - 3x)^2 = (y - 3x)(y - 3x)$   
 $= y^2 - 3xy - 3xy + 9x^2 = \boxed{y^2 - 6xy + 9x^2}$

49.  $(2p + q^3)^2 = (2p + q^3)(2p + q^3) = 4p^2 + 2pq^3 + 2pq^3 + q^6 = \boxed{4p^2 + 4pq^3 + q^6}$

55.  $(x^2 + xy + y^2)(x - y) = x^3 - x^2y + x^2y - xy^2 + xy^2 - y^3 = \boxed{x^3 - y^3}$

$$\begin{aligned} 57. (x-2)(x+2)(x^2+5) &= (x^2+2x-2x-4)(x^2+5) \\ &= (x^2-4)(x^2+5) = x^4+5x^2-4x^2-20 = \boxed{x^4+x^2-20} \end{aligned}$$