6.6

1) $24az - 18ah + 60yz - 45yh$
$3(8az - 6ah + 20yz - 15yh)$
$3(2a(4z - 3h) + 5y(4z - 3h))$
$3(4z - 3h)(2a + 5y)$

3) $5u^2 - 9uv + 4v^2$
$5u^2 - 4uv - 5uv + 4v^2$
$u(5u - 4v) - v(5u - 4v)$
$(5u - 4v)(u - v)$

 20 / -4 -5 / -9

5) $-2x^3 + 128y^3$
$-2(x^3 - 64y^3)$
$(x) \quad (4y)$
$-2(x - 4y)(x^2 + 4xy + 16y^2)$

7) $5n^3 + 7n^2 - 6n$
$n(5n^2 + 7n - 6)$
$n(5n^2 + 10n - 3n - 6)$
$n(5n(n + 2) - 3(n + 2))$
$n(n + 2)(5n - 3)$

 -30 / 10 -3 / 7

9) $54u^3 - 16$
$2(27u^3 - 8)$
$(3u) \quad (2)$
$2(3u - 2)(9u^2 + 6u + 4)$

11) $n^2 - n$
$n(n - 1)$

13) $x^2 - 4xy + 3y^2$
$x^2 - xy - 3xy + 3y^2$
$x(x - y) - 3y(x - y)$
$(x - y)(x - 3y)$

 3 / -1 -3 / -4

15) $9x^2 - 25y^2$
$(3x) \quad (5y)$
$(3x + 5y)(3x - 5y)$

17) $m^2 - 4n^2$
$(m) \, (2n)$
$(m + 2n)(m - 2n)$

19) $36b^2c - 16xd - 24b^2d + 24xc$
$4(9b^2c - 4xd - 6b^2d + 6xc)$
$4(1(9b^2c - 4xd) - 6(b^2d + xc))$
$4(9b^2c - 6b^2d + 6xc - 4xd)$
$4(3b^2(3c - 2d) + 2x(3c - 2d))$
$4(3c - sd)(3b^2 + 2x)$

21) $128 + 54x^3$
$2(64 + 27x^3)$
$(4) \quad (3x)$
$2(4 + 3x)(16 - 12x + 9x^2)$

23) $2x^3 + 6x^2y - 20y^2x$
$2x(x^2 + 3xy - 10y^2)$
$2x(x + 5y)(x - 2y)$

 -10 / 5 -2 / 3

25) $n^3 + 7n^2 + 10n$
$n(n^2 + 7n + 10)$
$n(n + 5)(n + 2)$

 10 / 5 2 / 7

27) $27x^3 - 64$
$(3x) \quad (4)$
$(3x - 4)(9x^2 + 12x + 16)$

29) $5x^2 + 2x$
$x(5x + 2)$

31) $3k^3 - 27k^2 + 60k$
$3k(k^2 - 9k + 20)$
$3k(k - 4)(k - 5)$

 20 / -4 -5 / -9

33) $mn - 12x + 3m - 4xn$

$1(mn - 12x) + 1(3m - 4xn)$
$mn + 3m - 4xn - 12x$
$m(n + 3) - 4x(n + 3)$
$(n + 3)(m - 4x)$

35) $16x^2 - 8xy + y^2$
$(4x - y)^2$

 16 / -4 -4 / -8

37) $27m^2 - 48n^2$

$3(9m^2 - 16n^2)$

$(3m) \ (4n)$

$3(3m + 4n)(3m - 4n)$

39) $9x^3 + 21x^2y - 60y^2x$

$3x(3x^2 + 7xy - 20y^2)$

$3x(3x^2 + 12xy - 5xy - 20y^2)$

$3x\big(3x(x + 4y) - 5y(x + 4y)\big)$

$3x(x + 4y)(3x - 5y)$

-60

12   -5

7

41) $2m^2 + 6mn - 20n^2$

$2(m^2 + 3mn - 10n^2)$

$2(m + 5n)(m - 2n)$

-10

5   -2

3