AA PREP—FACTORING VARIATIONS MORE—WORKSHEET #1 KEY

Factor completely.

1) $x(3x+5)-2(3x+5)$ GROUPING

$\boxed{(x-2)(3x+5)}$

2) $x^3+4x^2-9x-36$ GROUPING

$x^2(x+4)-9(x+4)$ DIFF OF TWO SQUARES

$(x^2-9)(x+4)$

$\boxed{(x-3)(x+3)(x+4)}$

3) $5x^2-2x-3$ MORE COMPLICATED QUADRATIC TRINOMIAL $a \neq 1$

-15 a·c

-5 3

-2 b

$5x^2-5x+3x-3$

$5x(x-1)+3(x-1)$

$\boxed{(5x+3)(x-1)}$

4) $6x^2+7x-10$ MORE COMPLICATED QUADRATIC TRINOMIAL $a \neq 1$

-60 a·c

12 -5

7 b

$6x^2+12x-5x-10$

$6x(x+2)-5(x+2)$

$\boxed{(6x-5)(x+2)}$

5) $36x^2-12x+1$ PERFECT SQUARE TRINOMIAL

$(6x)^2$ $(1)^2$

$\boxed{(6x-1)^2}$

6) $9x^2+12x+4$ PERFECT SQUARE TRINOMIAL

$(3x)^2$ $(2)^2$

$\boxed{(3x+2)^2}$

7) x^3+1 SUM OF CUBES

$(x)^3$ $(1)^3$

$\boxed{(x+1)(x^2-x+1)}$

8) $125x^3-216$ DIFF OF CUBES

$(5x)^3$ $(6)^3$

$\boxed{(5x-6)(25x^2+30x+36)}$

9) x^6+27 SUM OF CUBES

$(x^2)^3$ $(3)^3$

$\boxed{(x^2+3)(x^4-3x^2+9)}$

10) $64x^9-1$ DIFF OF CUBES

$(4x^3)^3$ $(1)^3$

$\boxed{(4x^3-1)(16x^6+4x^3+1)}$