AA PREP: FACTORING—WORKSHEET #1

KEY

Factor completely.

1) $x^2 - 225$

DIFFERENCE OF TWO SQUARES

$(x)^2 \ (15)^2$

$\boxed{(x-15)(x+15)}$

2) $18x^4 - 27x$

GCF

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

3) $x^2 - x - 6$

BASIC QUADRATIC TRINOMIAL ($a=1$) ax^2+bx+c

-6 PRODUCT

-3 2

-1 SUM

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

4) $2x^4 - 32$

GCF

DIFFERENCE OF TWO SQUARES

$2(x^4-16)$

$(x^2)^2 \ (4)^2$

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

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

5) $x(2x-5)+4(2x-5)$

REGROUP

$\boxed{(x+4)(2x-5)}$

6) $x^2 + 10x + 25$

PERFECT SQUARE TRINOMIAL (ALSO BASIC QUADRATIC TRINOMIAL)

25 PRODUCT

5 5

10 SUM

$(x+5)(x+5)$

$\boxed{(x+5)^2}$

7) $16x^2 - y^2$

DIFFERENCE OF TWO SQUARES

$(4x)^2 \ (y)^2$

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

8) $-x^2 - x + 30$

GCF (ALWAYS DIVIDE -1 OUT FIRST)

$-1(x^2+x-30)$

BASIC QUADRATIC TRINOMIAL

-30 PRODUCT

6 -5

1 SUM

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

9) $2x^2 + 2x - 144$

GCF

BASIC QUADRATIC TRINOMIAL

$2(x^2+x-72)$

-72 PRODUCT

9 -8

1 SUM

$\boxed{2(x+9)(x-8)}$

10) $3x^2 + \boxed{22x} + 35$

MORE COMPLICATED QUADRATIC TRINOMIAL ($a \neq 1$) ax^2+bx+c

105 PRODUCT

7 15

22 SUM

$3x^2 + 7x + 15x + 35$

$x(3x+7) + 5(3x+7)$

$\boxed{(x+5)(3x+7)}$