SECTION 4.3 **ALGEBA 2** **THOMPSON**

FACTORING

********** **ALWAYS TWO SET OF PARENTHESES** **********

BINOMIAL WITH NEGATIVE, TAKE SQUARE ROOT, OPPOSITE SIGNS

1) $x^2 - 49$ difference of two squares *TAKE SQUARE ROOT

(x+7)(x-7) signs are different in answer

2) $x^2 - 25$ difference of two squares *TAKE SQUARE ROOT

(x+5)(x-5) signs are different in answer

3) $x^2 - 9$ difference of two squares *TAKE SQUARE ROOT

(X-3)(x+3) signs are different in answer

4) $x^2 - 64$ difference of two squares *TAKE SQUARE ROOT

(x+8)(x-8) signs are different in answer

5) $v^2 - 121$ difference of two squares *TAKE SQUARE ROOT

(x+11)(x-11) signs are different in answer

SECOND SIGN IS POSITIVE – ADD / SIGNS ARE THE SAME – FIRST SIGN

6) $x^2 + 14x + 24$ factors of 24 that add to get 14

(x + 2)(x + 12)

7) $x^2 + 9x + 8$ factors of 8 that add to get 9

(x + 1)(x + 8)

8) $x^2 + 7x + 10$ factors of 10 that add to get 7

(x + 2)(x + 5)

9) $x^2 + 10x + 21$ factors of 21 that add to get 10

(x + 3)(x + 7)

10) $x^2 - 8x + 15$ factors of 15 that add to get 8

(x - 3)(x - 5)

11) $x^2 - 12x + 20$ factors of 20 that add to get 12

(x - 2)(x - 10)

12) $x^2 - 24x + 44$ factors of 44 that add to get 24

(x - 2)(x - 22)

13) $x^2 - 8x + 12$ factors of 12 that add to get 8

(x - 6)(x - 2)

SECOND SIGN IS NEGATIVE – SUBTRACT AND IN ANSWER SIGNS ARE DIFFERENT, HIGHER # TAKES FIRST SIGN FROM PROBLEM

14) $g^2 + 5g - 14$ factors of 14 that subtract to get 5

(x + 7)(x - 2)

15) $g^2 + g - 30$ factors of 30 that subtract to get 1

(x + 6)(x - 5)

16) $w^2 + 6w - 16$ factors of 16 that subtract to get 6

(x + 8)(x - 2)

17) $w^2 + 2w - 24$ factors of 24 that subtract to get 2

(x + 6)(x - 4)

18) $w^2 - 13w - 30$ factors of 30 that subtract to get 13

(x - 15)(x + 2)

19) $w^2 - 2w - 15$ factors of 15 that subtract to get 2

(x - 5)(x + 3)

20) $w^2 - 8w - 20$ factors of 20 that subtract to get 8

(x - 10)(x + 2)

EASY WAY TO GET FACTORS:

FACTORS 72

Write Factors: 1 and 72

then double the left column
and half the right column

EASY WAY TO GET FACTORS

DOUBLE	HALF
1	72
2	36
4	18
8	9
can't half 9 then we try 3	
3	24
6	12

ALWAYS TRY 2, 3, 5, 7 ON
THE LEFT-HAND SIDE IF YOU CAN'T

,

EASY WAY TO GET FACTORS

DOUBLE	HALF
1	42
2	21
can't half 21 then we try 3	
3	14
6	7

ALWAYS TRY 2, 3, 5, 7 ON
THE LEFT-HAND SIDE IF YOU CAN'T
HALF THE RIGHT

EASY WAY TO GET FACTORS

DOUBLE	HALF
1	30
2	15
can't half 15 then we try 3	
3	10
6	5

ALWAYS TRY 2, 3, 5, 7 ON
THE LEFT-HAND SIDE IF YOU CAN'T
HALF THE RIGHT