Correct from last day:

When Is a Wrestler "King of the Ring"?

Factor each trinomial below. Find your answer and notice the letter next to it. Write this letter in the box containing the number of that exercise. Keep working and you will get the gripping answer to the title question.

(1) n^2+6n+5	(8) $t^2+10t+16$	(15) $a^2+5ab+6b^2$
(2) $n^2+7n+10$	(9) $t^2-15t+50$	(16) $a^2-4ab-21b^2$
(3) $n^2-7n+12$	(10) t^2+8t-9	(17) $a^2+6ab-7b^2$
(4) $n^2-11n+28$	(11) $t^2-7t-30$	(18) $a^2-14ab-32b^2$
(5) $n^2+2n-15$	(12) t^2-t-30	(19) $a^2-29ab+100b^2$
(6) $n^2-5n-24$	(13) $t^2+14t+48$	(20) $a^2+7ab-18b^2$
(7) n^2+n-56	(14) $t^2+8t-48$	(21) $a^2+2ab+b^2$
Answers:	Answers:	Answers:
(L) $(n+2)(n+6)$	(N) $(t-6)(t+5)$	(K) $(a-8b)(a+4b)$
(H) $(n+5)(n-3)$	(V) $(t-25)(t+2)$	(H) $(a+7b)(a-b)$
(W) $(n+5)(n+1)$	(T) $(t-5)(t-10)$	(A) $(a-20b)(a+5b)$
(E) $(n-3)(n-4)$	(T) $(t+6)(t+8)$	(E) $(a+2b)(a+3b)$
(B) $(n-1)(n+15)$	(O) $(t-10)(t+3)$	(W) $(a+9b)(a-2b)$
(S) $(n+8)(n-7)$	(B) $(t+15)(t-2)$	(T) $(a-7b)(a+3b)$
(H) $(n+2)(n+5)$	(I) $(t+8)(t+2)$	(O) $(a-25b)(a-4b)$
(E) $(n-8)(n+3)$	(H) $(t-4)(t+12)$	(S) $(a+6b)(a+3b)$
(R) $(n-12)(n-2)$	(S) $(t+9)(t-1)$	(N) $(a+b)(a+b)$
(N) $(n-7)(n-4)$	(A) $(t-24)(t+2)$	(R) $(a-16b)(a+2b)$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

P: -56
S: +1

(7) n^2+n-56 (18) $a^2-14ab-32b^2$ (21) $a^2+2ab+b^2$

$= n^2-7n+8n-56$ $= a^2-16ab+2ab-32b^2$ $= a^2+1ab+1ab+b^2$

$= n(n-7)+8(n-7)$ $= a(a-16b)+2b(a-16b)$ $= a(a+b)+b(a+b)$

$= (n-7)(n+8)$ $= (a-16b)(a+2b)$ $= (a+b)(a+b)$

$= (a+b)^2$

-1 56
-2 28
3
-4 14
7
6
-7 8
8

1 -32
2 -16
3
4 -8
7
6

Today's Learning Goal(s):

Date: Oct. 2/19
(Every lesson)

By the end of the class, I will be able to:

a) factor "tricky" trinomials of the form $ax^2 + bx + c$, $a \neq 1$

MCF 3MI

2.4 Factoring Quadratic Expressions (Day 1)

Recall: Factoring expresses a polynomial as a **product** of polynomials.

$$(2x+3)(x+2) \xrightarrow{\text{Expanding}} 2x^2+7x+6 \qquad 2x^2+7x+6 \xrightarrow{\text{Factoring}} (2x+3)(x+2)$$

Whenever you are faced with a factoring question, ALWAYS try to Common Factor FIRST!

Ex.1 Factor the following trinomials. (ALWAYS try to Common Factor FIRST)

a) $2x^2 + 7x + 3$ P: 6 S: 7

$= 2x^2 + x + 6x + 3$

$= x(2x+1) + 3(2x+1)$

$= (2x+1)(x+3)$

b) $3x^2 - 2x - 5$ P: -15 S: -2

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

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

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

1 15
3 -5

c) $16x^2 + 20x - 6$

$= 2(8x^2 + 10x - 3)$ P: -24

$= 2(8x^2 - 2x + 12x - 3)$

$= 2(2x(4x-1) + 3(4x-1))$

$= 2(4x-1)(2x+3)$

1 24
-2 +12
-3 +8
4 6
P: -24

d) $6x^2 - 7xy - 3y^2$ P: -18 S: -7

$= 6x^2 + 2xy - 9xy - 3y^2$

$= 2x(3x+y) - 3y(3x+y)$

$= (3x+y)(2x-3y)$

1 18
2 -9

e) $9x^2 - 15x + 6$ P: 6

$= 3(3x^2 - 5x + 2)$

$= 3(3x^2 - 3x - 2x + 2)$

$= 3(3x(x-1) - 2(x-1))$

$= 3(x-1)(3x-2)$

1 -6
-2 -3

f) $6y^3 + 15y^2 - 36y$

$= 3y(2y^2 + 5y - 12)$

$= 3y(2y^2 + 8y - 3y - 12)$

$= 3y(2y(y+4) - 3(y+4))$

$= 3y(y+4)(2y-3)$

Ex. 2 For each expression, name an integer k such that the quadratic trinomial can be factored.

a) $kx^2 + 4x + 1$

$4x^2+4x+1$

or

$3x^2+4x+1$

P: 1k

S: +4

2, 2 1, 3

P: 4 P: 3

$\therefore k=4$ or $k=3$

b) $4x^2 + kx - 10$

tomorrow

Ex. 3 Factor these tougher questions.

a) $6x^2 + 11xy + 3y^2$

b) $8x^2 - 14xy + 3y^2$

tomorrow

Assigned Practice: p. 110 #4, 5, 7bc, 9, 10, 13bd