Factoring Review

Day 81

① $2x^2 - 8$

$2 \cdot x \cdot x - 2 \cdot 4$

GCF $2(x^2 - 4)$

$2(x+2)(x-2)$

GCF

③ $3n^2 + 9n - 30$

$3 \cdot n \cdot n + 3 \cdot 3n - 3 \cdot 10$

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

$3(n-2)(n+5)$ $\quad -10 \mid -2 \cdot 5$

$-2n + 5n = 3n$

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

⑤ $2x^2 + 12x - 80$

$2 \cdot x \cdot x + 2 \cdot 6x - 2 \cdot 40$

$2(x^2 + 6x - 40)$ $\quad -40 \mid 10 \cdot -4$

$2(x+10)(x-4)$

⑦ $8n^2 - 18$

$2 \cdot 4 \cdot nn - 2 \cdot 9$

$2(4n^2 - 9)$

$2(2n+3)(2n-3)$

9. $4x^2 + 16x + 16$

11. $2x - 2xy^2$

$(2x)1 - (2x)y^2$

$2x(1 - y^2)$

$2x(1+y)(1-y)$

13. $24a^2 - 30a + 9$

$3(8a^2 - 10a + 3)$

$3(8a^2 - 10a + 3)$ $\quad 8 \cdot 3 = 24$, $-6 \mid -4$

$3(8a^2 - 4a - 6a + 3)$

$3(4a(2a-1) - 3(2a-1))$

$3(2a-1)(4a-3)$

15. $3x^2 - 42x + 147$

2. $2x^2 + 8x + 6$

$2(x^2+4x+3)$

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

$4b^2+44b+121$

$\sqrt{4b^2} = 2b$

$\sqrt{121} = 11$

$=(2b+11)^2$

4. $6x^2 - 26x - 20$

6. $5t^2 + 15t + 10$

8. $14x^2 + 7x - 21$

10. $18x + 12x^2 + 2x^3$

12. $3t^3 - 27t$

14. $10x^2 + 15x - 10$

16. $4x^4 - 4x^2$

$$36s^2 - 225$$

$$9 \cdot 4s^2 - 9 \cdot 25$$

$$= 9(4s^2 - 25)$$

$$9(2s+5)(2s-5)$$

can Factor a difference OF 2 squares

$$a^2 - b^2 = (a+b)(a-b)$$

you <u>cannot</u> Factor a <u>sum</u> OF 2 squares

$$a^2 + b^2 = \text{PRIME}$$

(NOT Factorable)

$$a^2 + b^2 \neq (a+b)(a+b)$$

<u>NOT</u> equal

$$a^2 + ab + ab + b^2$$

$$a^2 + 2ab + b^2$$

$$x^2 + 36 = \text{PRIME}$$

$$x^2 - 36 = (x+6)(x-6)$$

x^2+2x+5

PRIME

$\frac{5}{5|1}$ $5+1=6 \neq 2$

26, ~~22~~, 23, 24, ~~11~~, ~~3~~

(3) $a^2+2a+1 = (a+1)(a+1)$

quadratic $= \boxed{(a+1)^2}$

(11) $2a^2-18 = 2(a^2-9)$

$(2)a\cdot a - (2)9$

$2(a+3)(a-3)$

(22) $12w^2-27 = 3(4w^2-9)$

$(3)4w^2-(3)9$

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

(23) $g^3-25g = g(g^2-25)$

$(g)g\cdot g-25(g)$ $\boxed{g(g+5)(g-5)}$

(24) $x^2+6x+9 = (x+3)(x+3)$

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

(26) $36s^2-225$

$6\wedge 6$ $\quad 5\wedge 45$

$(3)\wedge 2\ (3)\wedge 2 \quad (5)\wedge(3)\wedge 2$

$= 9(4s^2-25)$

$9(2s+5)(2s-5)$