

ZERO FACTOR PROPERTY

IF
 $PQ = 0$
 THEN
 $P = 0$ $Q = 0$

① $6c^2 - 24c = 0$
 $6c(c-4) = 0$ (GCF)
 $6c = 0$ $c-4 = 0$
 $\frac{6c}{6} = \frac{0}{6}$ $(c=4)$
 $(c=0)$

② $y^2 - 14y = -49$
 $y^2 - 14y + 49 = 0$ (PSD)
 $(y-7)(y-7) = 0$
 $y-7=0$ $y-7=0$
 $(y=7)$ $(y=7)$

③ $-24x^2 + 14x - 2 = 0$
 $-2(12x^2 - 7x + 1) = 0$ (GCF)
 $-2(4x-1)(3x-1) = 0$ (KEY#)
 ~~$-2 \cdot 0$~~ $4x-1=0$ $3x-1=0$
 $4x=1$ $3x=1$
 $(x=\frac{1}{4})$ $(x=\frac{1}{3})$

④ $x(x-11) = -28$
 $x^2 - 11x + 28 = 0$
 $(x-4)(x-7) = 0$ (PSD)
 $x-4=0$ $x-7=0$
 $(x=4)$ $(x=7)$

⑤ $w^3 - 2w^2 - 16w + 32 = 0$
 $w^2(w-2) - 16(w-2) = 0$ (GCF)
 $(w-2)(w^2-16) = 0$ (DITS)
 $(w-2)(w+4)(w-4) = 0$
 $w-2=0$ $w+4=0$ $w-4=0$
 $(w=2)$ $(w=-4)$ $(w=4)$

⑥ $56x^3 + 13x^2 - 3x = 0$
 $x(56x^2 + 13x - 3) = 0$
 $x(56x^2 + 21x - 8x - 3) = 0$
 $x[7x(8x+3) - 1(8x+3)] = 0$
 $x(8x+3)(7x-1) = 0$
 $(x=0)$ $8x+3=0$ $7x-1=0$
 $8x=-3$ $7x=1$
 $(x=-\frac{3}{8})$ $(x=\frac{1}{7})$

$ac = 56(3) = 168$

P	±	Q
1	168	167
2	84	82
3	56	53
4	42	38
6	28	22
7	24	17
8	21	13
12	14	2