

Solving Rational Equations WS2

1) CD: $(7-x)$
 $7 = 7 + 7-x$
 ~~$x = 7$~~ $\boxed{\emptyset}$

2) CD: $(x-1)^2$
 $(x+3)(x-1) + 2(x-1)^2 = (x+3)^2$
 ~~$x^2 + 2x - 3 + 2x^2 - 4x + 2 = x^2 + 6x + 9$~~
 $2x^2 - 8x - 10 = 0$
 $x^2 - 4x - 5 = 0$
 $(x-5)(x+1) = 0$
 $\boxed{x=5 \quad x=-1}$

3) CD: $(x+2)$
 $x + x(x+2) = 5x + 8$
 $x + x^2 + 2x = 5x + 8$
 $x^2 - 2x - 8 = 0$
 $(x-4)(x+2) = 0$
 $\boxed{x=4} \quad \del{x=-2}$

4) CD: $2(a+1)(a-1)$
 $a+1 = 2a + 2(a-1)$
 $-3a = -3$
 ~~$a = 1$~~ $\boxed{\emptyset}$

5) CD: $(y+2)/(y-2)$
 $3(y+2) - 2y = 5(y-2)$
 $3y + 6 - 2y = 5y - 10$
 $-4y = -16$
 $\boxed{y=4}$

6) CD: $x(x-4)$
 $(x+4)(x-4) + 3x = -16$
 $x^2 - 16 + 3x = -16$
 $x^2 + 3x = 0$
 $x(x+3) = 0$
 ~~$x=0$~~ $\boxed{x=-3}$

7) CD: 24
 $3(k-3) - 4(k+2) = 2 \cdot 5$
 $3k - 9 - 4k - 8 = 10$
 $-k = 27$
 $\boxed{k = -27}$

8) CD: $(x+1)(x-3)$
 $x(x-3) + 3(x+1) + (x-3)(x+1) = 0$
 ~~$x^2 - 3x + 3x + 3 + x^2 - 2x - 3 = 0$~~
 $2x^2 - 2x = 0$
 $2x(x-1) = 0$
 $\boxed{x=0 \quad x=1}$