Solving Rational Equations Independent Practice

1. $\frac{3}{a-8} = \frac{7}{2a+1}$

$6a+3 = 7a - 56$

$a = 59$

$a \neq 8, -\frac{1}{2}$

$-1(5-a) \div -1$

$-1(a-5)$

2. $\frac{(2x-3)}{2} = \frac{3}{(x+4)}$ $x \neq -4$

$2x^2 + 5x - 12 = 6$

$2x^2 + 5x - 18 = 0$

$x^2 + 5x - 36$

$(x+\frac{9}{2})(x-\frac{4}{2})$

$(x+9/2)(x-4)$

$x = -9/2, 4$

3. $\frac{a+2}{5-a} = -\frac{6}{a-5}$ $a \neq 4$ or 5

$-2-a = -6$

$a = 4$

No solution

$a^2 - 3a - 10 = -30 + 6a$

$a^2 - 9a + 20 = 0$

$(a-4)(a-5) = 0$

$a = 4 \quad a = 5$

4. $\frac{a-8}{a} = \frac{3}{a+5}$ $a \neq 0$ $a \neq -5$

$a^2 - 3a - 40 = 3a$

$a^2 - 6a - 40 = 0$

$(a-10)(a+4) = 0$

$a = 10$

$a = -4$

5. $\frac{w}{1} + \frac{16}{w} = \frac{10}{1}$ LCD = w

$w^2 + 16 = 10w$

$w^2 - 10w + 16 = 0$

$(w-8)(w-2) = 0$

$w = 2, 8$

6. $\frac{1(k)}{3(k)} + \frac{2(3)}{k(3)} \frac{13}{3k}$ LCD $3k$

$\frac{1}{3} * \frac{2}{k} = \frac{13}{3k}$

$k + 6 = 13$

$k = 7$

7. $\frac{5r}{r+1} = 4 - \frac{5}{r+1}$ No solution

$\frac{5r}{r+1} + \frac{5}{r+1} = 4$

$\frac{5r+5}{r+1} = 4$

$\frac{5(r+1)}{(r+1)} = 4$

NO SOLUTION

$5 \neq 4$

8. $\frac{2}{c^2-4c} = \frac{1}{3c} + \frac{1}{3}$ LCD $3c(c-4)$

$c(c-4)$

$6 = c - 4 + c^2 - 4c$

$6 = c^2 - 3x - 4$

$c^2 - 3x - 10 = 0$

$(c-5)(c+2)$

$c = -2$ or 5