

Algebra 2, Unit 6

Retest Review Ticket

Name: Key

Date:

1) Simplify. Then, state the excluded values.

$$\frac{3y(y+7)}{3y^2+21y} = \frac{3y}{(x+3)(x-3)} \quad \begin{matrix} x \neq 3, -3 \\ y \neq -7 \end{matrix}$$

2) Multiply. $\frac{2a \cdot 3ab}{6b \cdot 8a^2} = \frac{3ab}{8}$

3) Divide. $\frac{(x-2)}{x^2-7x-18} \div \frac{3x+6}{3x-6} = \frac{3(x-2)}{3(x+2)} = \frac{(x-2)}{(x-9)(x+2)^2}$

4) Simplify. $\frac{5}{6ab} - \frac{7}{8a} = \frac{20}{24ab} - \frac{21b}{24ab} = \frac{20-21b}{24ab}$

5) Subtract. $\frac{5(x+2)}{2x-12} - \frac{20}{x^2-4x-12} = \frac{5x+10}{2(x-6)} - \frac{40}{2(x-6)(x+2)} = \frac{5(x+2)}{2(x-6)(x+2)} = \frac{5}{2(x+2)}$

6) Simplify. $\frac{5(r^2-4)}{5r^2-20} = \frac{5(r-2)(r+2)}{5r(r+2)} = \frac{r-2}{r}$

7) Simplify. $\frac{3x+10}{x+5} + \frac{2x+15}{x+5} = \frac{5x+25}{x+5} = \frac{5(x+5)}{x+5} = 5$

Simplify each of the following.

$$\frac{5(x+3)}{x^2y^3} \cdot \frac{xy^2}{7(x+3)} = \frac{5}{7xy^2}$$

8) $\frac{3(w+3)}{w-3} - \frac{2}{w^2-9} = \frac{3w+9}{(w+3)(w-3)} - \frac{2}{(w+3)(w-3)} = \frac{3w+7}{(w+3)(w-3)}$

9) $\frac{5x+15}{x^2y^3} = \frac{5}{7xy^2}$

10) $\frac{3}{24e^2} \cdot \frac{2e^2}{10e} = \frac{6e}{10e} = \frac{3}{5}$

11) $\frac{a}{a-4} - \frac{3}{a-4} = \frac{a-3}{a-4}$

12) $\frac{3x^2}{x+2} \div \frac{3x}{x^2-4} = \frac{3x^2}{x+2} \cdot \frac{(x+2)(x-2)}{3x} = x(x-2)$

13) $\frac{1}{a} - \frac{1}{b} = \frac{b-a}{ab}$
 $\frac{1}{b} - 1 = \frac{1-b}{b}$
 $\frac{b-a}{ab} \cdot \frac{b}{1-b} = \frac{b-a}{a(1-b)}$

14) $\frac{c^2}{2d^2} = \frac{5}{2c^4d}$