Algebra: Adding & Subtracting Rational Expressio

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Name: _____ Date: _____ Score: / 10

DIRECTIONS *Find the LCD, rewrite each fraction, then add or subtract. Simplify fully.*

1 Add (different denominators):

$$\frac{3}{4x} + \frac{4}{7x}$$

Answer: _____

2 Add (same denominator):

$$\frac{1}{x+5} + \frac{5}{x+5}$$

Answer: _____

3 Add (different denominators):

$$\frac{4}{3x} + \frac{1}{6x}$$

Answer: _____

4 Add (same denominator):

$$\frac{3}{x+5} + \frac{4}{x+5}$$

Answer: _____

5 Add (same denominator):

$$\frac{5}{x+3} + \frac{4}{x+3}$$

Answer: _____

6 Add (same denominator):

$$\frac{3}{x+6} + \frac{3}{x+6}$$

Answer: _____

7 Subtract (binomial denominators):

$$\frac{4}{x+2} - \frac{3}{x+2}$$

Answer: _____

8 Subtract (binomial denominators):

$$\frac{4}{x+5} - \frac{2}{x+5}$$

Answer: _____

9 Subtract (binomial denominators):

$$\frac{4}{x+1} - \frac{3}{x+4}$$

Answer: _____

10 Add (different denominators):

$$\frac{2}{4x} + \frac{4}{5x}$$

Answer: _____

Answer Key & Solutions

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TEACHER NOTES *Factor all denominators first to find the LCD. Remind students to watch signs when subtracting numerators.*

1 Add (different denominators):

$\frac{3}{4x} + \frac{4}{7x}$

= $\frac{37}{28x}$

2 Add (same denominator):

$\frac{1}{x+5} + \frac{5}{x+5}$

= $\frac{6}{x+5}$

3 Add (different denominators):

$\frac{4}{3x} + \frac{1}{6x}$

= $\frac{3}{2x}$

4 Add (same denominator):

$\frac{3}{x+5} + \frac{4}{x+5}$

= $\frac{7}{x+5}$

5 Add (same denominator):

$\frac{5}{x+3} + \frac{4}{x+3}$

= $\frac{9}{x+3}$

6 Add (same denominator):

$\frac{3}{x+6} + \frac{3}{x+6}$

= $\frac{6}{x+6}$

7 Subtract (binomial denominators):

$\frac{4}{x+2} - \frac{3}{x+2}$

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

8 Subtract (binomial denominators):

$\frac{4}{x+5} - \frac{2}{x+5}$

= $\frac{4(x+5)-2(x+5)}{(x+5)(x+5)}$

9 Subtract (binomial denominators):

$\frac{4}{x+1} - \frac{3}{x+4}$

= $\frac{4(x+4)-3(x+1)}{(x+1)(x+4)}$

10 Add (different denominators):

$\frac{2}{4x} + \frac{4}{5x}$

= $\frac{13}{10x}$