

5.3 Adding and Subtracting Rational Expressions With Like Denominators

Perform the indicated operation. Make sure your answer is in simplest form.

$$1. \quad \frac{9}{15x} + \frac{2}{15x} = \boxed{\frac{11}{15x}}$$

$$2. \quad \frac{5x}{7} - \frac{2x}{7} = \boxed{\frac{3x}{7}}$$

$$3. \quad \frac{4x}{2x+3} + \frac{7}{2x+3} = \boxed{\frac{4x+7}{2x+3}}$$

$$4. \quad \frac{2}{5x+9} + \frac{x}{5x+9} = \boxed{\frac{x+2}{5x+9}}$$

$$5. \quad \frac{5}{8a} - \frac{2}{8a} = \boxed{\frac{3}{8a}}$$

$$6. \quad \frac{7}{x-5} - \frac{4}{x-5} = \boxed{\frac{3}{x-5}}$$

$$7. \quad \frac{y}{y^2-9} + \frac{5}{y^2-9} = \boxed{\frac{y+5}{y^2-9}}$$

$$8. \quad \frac{8}{2x^2} + \frac{3}{2x^2} = \boxed{\frac{11}{2x^2}}$$

$$9. \quad \frac{2}{x+1} + \frac{1}{x+1} = \boxed{\frac{3}{x+1}}$$

$$10. \quad \frac{x-1}{3x+4} + \frac{2x+9}{3x+4} = \boxed{\frac{3x+8}{3x+4}}$$

$$11. \quad \frac{5x}{3x^2} - \frac{4}{3x^2} = \boxed{\frac{5x-4}{3x^2}}$$

$$12. \quad \frac{7x+4}{x^2+3x+2} - \frac{3x-2}{x^2+3x+2} = \boxed{\frac{4x+2}{x^2+3x+2}}$$

$$13. \quad \frac{6x-12}{x+3} \cdot \frac{4x+12}{3x-6} = \boxed{8}$$

$$14. \quad \frac{6x^2+x-1}{6x^2+5x+1} \div \frac{3x^2+2x-1}{3x^2+4x+1}$$

$$\frac{6(x-2)}{x+3} \cdot \frac{4(x+3)}{3(x-2)}$$

~~$$\frac{6x^2+x-1}{6x^2+5x+1} \div \frac{3x^2+2x-1}{3x^2+4x+1}$$~~

$$\frac{(3x-1)(2x+1)}{(3x+1)(2x+1)} \div \frac{(3x-1)(x+1)}{(3x+1)(x+1)}$$

$$\frac{(3x-1)(2x+1)}{(3x+1)(2x+1)} \cdot \frac{(3x+1)(x+1)}{(3x-1)(x+1)} = \boxed{1}$$