

Quiz

Simplify

$$1. \frac{x^3 + 7x^2}{x^2 + 5x - 14} = \frac{x^2 \cancel{(x+7)}}{\cancel{(x+7)}(x-2)} = \frac{x^2}{x-2}$$

$$2. \frac{3x^2 + 7x + 2}{3x^2 + 13x + 4}$$

$$\frac{6}{1, 6}$$
$$\frac{12}{1, 12}$$

$$\frac{3x^2 + x + 6x + 2}{3x^2 + x + 12x + 4}$$

$$\frac{x(3x+1) + 2(3x+1)}{x(3x+1) + 4(3x+1)}$$

$$\frac{x(3x+1) + 2(3x+1)}{x(3x+1) + 4(3x+1)}$$

$$\frac{\cancel{(3x+1)}(x+2)}{\cancel{(3x+1)}(x+4)}$$

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

$$\frac{3x^2 + 7x + 2}{3x^2 + 13x + 4} = \frac{\cancel{(3x+1)}(x+2)}{\cancel{(3x+1)}(x+4)}$$

$$3. \quad \frac{x^2 - 25}{x^2 - 3x - 10} \cdot \frac{x+2}{x}$$

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

$$26. \frac{(m-n)^2}{m+n} \div \frac{m^2-mn}{m}$$

$$\frac{(m-n)^2}{m+n} \cdot \frac{m}{m(m-n)}$$

$$\frac{m-n}{m+n}$$

$$28. \frac{x-3}{2-x} \div \frac{x^2+3x-18}{x^2+2x-8}$$

$$\frac{x-3}{2-x} \cdot \frac{x^2+2x-8}{x^2+3x-18}$$

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

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

$$-\left(\frac{x+4}{x+6}\right) \approx \frac{-x-4}{x+6} \approx \frac{x+4}{-x-6}$$

$$\frac{(-1)\cancel{(2-x)}}{\cancel{2-x}}$$

$$\approx -\frac{-x-4}{-x-6}$$

$$30. \frac{x+1}{(x+1)(2x+3)} + \frac{20x+100}{2x+3}$$

$$\frac{\cancel{x+1}}{(x+1)\cancel{(2x+3)}} \cdot \frac{\cancel{2x+3}}{20(x+5)}$$

$$\frac{1}{20(x+5)}$$

7.3: Adding and Subtracting Rational Expressions with Common Denominators and Least Common Denominator

Ex: (p 449)

$$2. \frac{x+1}{7} + \frac{6}{7}$$

$$4. \frac{3p}{2q} + \frac{11p}{2q}$$

$$6. \frac{8y}{y-2} - \frac{16}{y-2}$$

$$10. \frac{x^2+9x}{x+7} - \frac{4x+14}{x+7}$$

$$12. \frac{3y}{y^2+3y-10} - \frac{6}{y^2+3y-10}$$

$$18. \frac{6x^2}{2x-5} - \frac{25+2x^2}{2x-5}$$

7.4: Adding and Subtracting Rational Expressions with Unlike Denominators

Ex: (p 455)

$$2. \frac{15}{7a} + \frac{8}{6a}$$

$$4. \frac{4c}{d} - \frac{8d}{5}$$

$$10. \frac{5}{x-4} + \frac{4x}{x^2-16}$$

$$12. \frac{5}{y^2} - \frac{y}{2y+1}$$

$$14. \frac{15}{y-4} + \frac{20}{4-y}$$

$$16. \frac{5}{a-7} + \frac{5}{7-a}$$

$$18. \frac{-9}{25x^2-1} + \frac{7}{1-25x^2}$$

$$20. \frac{7}{x^2} - 5x$$

$$24. \frac{7}{2x-3} - 3$$

$$30. \frac{5x}{6} + \frac{11x^2}{2}$$

$$32. \frac{5x}{(x-2)^2} - \frac{3}{x-2}$$

$$36. \frac{6}{x} - 1$$

$$40. \frac{10}{3n-4} - \frac{5}{4-3n}$$

$$42. \frac{5}{(x+1)(x+5)} - \frac{2}{(x+5)^2}$$

$$44. \frac{x}{x^2-4} - \frac{5}{x^2-4x+4}$$

$$50. \frac{-1}{a-2} + \frac{4}{4-2a}$$

$$54. \frac{-7}{y^2-3y+2} - \frac{2}{y-1}$$

$$58. \frac{x+4}{x^2+12x+20} + \frac{x+1}{x^2+8x-20}$$

7.8: Simplifying Complex Fractions

Ex: (492)

$$2. \frac{\frac{1}{8}}{-\frac{5}{12}}$$

$$8. \frac{\frac{3}{4} - \frac{1}{2}}{\frac{3}{8} + \frac{1}{6}}$$

$$12. \frac{\frac{7}{10} - \frac{3}{5}}{\frac{1}{2}}$$

$$18. \frac{\frac{x}{2} + 2}{\frac{x}{2} - 2}$$

$$22. \frac{x - \frac{1}{2x+1}}{1 - \frac{x}{2x+1}}$$

$$28. \frac{3}{1 - \frac{4}{3}}$$

$$30. \frac{\frac{m+2}{m-2}}{\frac{2m+4}{m^2-4}}$$

$$34. \frac{2 + \frac{6}{x}}{1 - \frac{9}{x^2}}$$

$$38. \frac{\frac{2}{x} + \frac{x}{2}}{\frac{2}{x} - \frac{x}{2}}$$

$$40. \frac{\frac{4}{x} + \frac{x}{x+1}}{\frac{1}{2x} + \frac{1}{x+6}}$$