

Simplifying Rationals

Simplify each expression.

$$1) -\frac{36m^5n^3}{48m^2n^4} = \frac{-3m^3}{4n}$$

$$2) \frac{9n+27}{2n^2+3n-9} = \frac{9}{2n-3}$$

$$3) \frac{3b^2+36b+81}{4b+36} = \frac{3(b+3)}{4}$$

$$4) \frac{14p-56}{21p-35} = \frac{2(p-4)}{3p-5}$$

$$5) \frac{3k^3-6k^2-45k}{7k^2-30k-25} = \frac{3k(k+3)}{7k+5}$$

$$6) \frac{21k-12}{7k-4} \cdot \frac{1}{k+7} = \frac{3}{k+7}$$

$$7) \frac{2x^2-8x}{10} \cdot \frac{10}{2x^2+14x} = \frac{x-4}{x+7}$$

$$8) \frac{3}{3x-10} \div \frac{9}{27x-90} = 3$$

$$9) \frac{1}{v-8} \div \frac{7v-3}{42v-18} = \frac{6}{v-8}$$

$$10) \frac{2p+1}{20p+10} \div \frac{2p^2+11p+5}{2p^2-9p-5} = \frac{p-5}{10(p+5)}$$

$$11) \frac{5n^2+22n+8}{15n-24} \div \frac{5n+2}{15n-24} = n+4$$

$$12) \frac{63x-36}{7x-4} \cdot \frac{24x^3-80x^2}{21x-70} = \frac{72x^2}{7}$$

4
 $4b^2+6b+2b+3$

$$13) \frac{2}{3p^2+12p} - \frac{5p}{2p} = \frac{4-15p^2-60p}{6p(p+4)}$$

$$14) \frac{3b}{3} + \frac{3}{4b+8} = \frac{4b^2+8b+3}{4(b+2)}$$

12

$$15) \frac{4}{k+3} - \frac{4}{3k-2} = \frac{8k-20}{(3k-2)(k+3)}$$

$$16) \frac{5a}{a-2} + \frac{2}{a-1} = \frac{5a^2-3a-4}{(a-2)(a-1)}$$

Complex Fractions

1. $\frac{\frac{2}{x}}{\frac{9}{y}}$

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

3. $\frac{\frac{7}{x} + \frac{3}{y}}{-\frac{6}{x} + \frac{3}{y}} = \frac{7y+2x}{-6y+3x}$

4. $\frac{\frac{4}{xy} - \frac{1}{y}}{\frac{2}{x} + \frac{3}{y}} = \frac{4-x}{3x+2y}$

Circle final answer.

Simplify Completely.

5. $\frac{\frac{7}{x+1} + 3}{2 + \frac{5}{x+1}} = \frac{3x+10}{2x+7}$

6. $\frac{\frac{6}{y+7}}{\frac{8y}{y^2-49}}$

7. $\frac{\frac{3x}{x^2-25} + \frac{2}{x+5}}{\frac{4}{x+5} + \frac{1}{x-5}} = \frac{x-2}{x-3}$

8. $\frac{\frac{2x}{x^2+6x+5}}{\frac{6}{x+5} + \frac{1}{x+1}} = \frac{2x}{7x+11}$

12. $\frac{1 + \frac{1}{x}}{1 - \frac{1}{x}}$

13. $\frac{\frac{2}{4x+12}}{\frac{4}{2x+6} + \frac{1}{x+3}} = \frac{1}{6}$

14. $\frac{\frac{4}{x^2-25} + \frac{2}{x+5}}{\frac{1}{x+5} - \frac{1}{x-5}} = -\frac{x-3}{5}$