Algebra 3-4   Name_____

Simplifying Rational Expressions #1   Date_____ Period_____

Simplify each expression.

1) $\dfrac{\dfrac{4}{a}}{\dfrac{16}{a}}$

2) $\dfrac{\dfrac{3u}{5}}{\dfrac{u}{3}}$

3) $\dfrac{\dfrac{x}{36}}{\dfrac{1}{6}}$

4) $\dfrac{\dfrac{36}{u^2}}{\dfrac{u}{6}}$

5) $\dfrac{\dfrac{4}{x^2}+\dfrac{x}{4}}{x^2}$

6) $\dfrac{\dfrac{x^2}{2}}{\dfrac{2x}{3}-\dfrac{4}{3}}$

7) $\dfrac{\dfrac{a-6}{15}-\dfrac{3}{a-6}}{9}$

8) $\dfrac{\dfrac{5}{x}-\dfrac{x-5}{5}}{\dfrac{x-5}{5x}}$

9) $\dfrac{\dfrac{4}{x} - \dfrac{x^2}{16}}{\dfrac{16}{3} + \dfrac{3}{2}}$

10) $\dfrac{\dfrac{6}{x} + \dfrac{x-2}{x}}{\dfrac{9}{4} + \dfrac{4x}{x-2}}$

11) $\dfrac{\dfrac{a-6}{2a+1} - \dfrac{2a+1}{a}}{\dfrac{3}{a-6} - \dfrac{2a+1}{a}}$

12) $\dfrac{\dfrac{x}{x-3} - \dfrac{x^2}{x-6}}{\dfrac{2}{x-6} + \dfrac{x-6}{4}}$

13) $\dfrac{\dfrac{x}{20} + \dfrac{5}{6}}{\dfrac{16}{x^2} + \dfrac{1}{6}}$

14) $\dfrac{\dfrac{x-2}{2x+3} - \dfrac{2x+3}{3x+1}}{\dfrac{3x+1}{2x+3} - \dfrac{x}{2x+3}}$

15) $\dfrac{\dfrac{1}{4} + \dfrac{1}{u}}{\dfrac{u+2}{u+6} + \dfrac{u+2}{4u}}$

16) $\dfrac{\dfrac{3m+5}{3m+1} - \dfrac{m+2}{3m+5}}{\dfrac{m+2}{3m+5} + \dfrac{m+2}{3m+5}}$

Answers to Simplifying Rational Expressions #1

1) $\dfrac{1}{4}$

2) $\dfrac{9}{5}$

3) $\dfrac{x}{6}$

4) $\dfrac{216}{u^3}$

5) $\dfrac{16 + x^3}{4x^4}$

6) $\dfrac{3x^2}{4x - 8}$

7) $\dfrac{a^2 - 12a - 9}{135a - 810}$

8) $\dfrac{25 - x^2 + 5x}{x - 5}$

9) $\dfrac{192 - 3x^3}{328x}$

10) $\dfrac{8x - 32 + 4x^2}{25x^2 - 18x}$

11) $\dfrac{-3a^3 + 8a^2 + 59a + 6}{-4a^3 + 26a^2 + 26a + 6}$

12) $\dfrac{-4x^3 + 16x^2 - 24x}{80x + x^3 - 15x^2 - 132}$

13) $\dfrac{3x^3 + 50x^2}{960 + 10x^2}$

14) $\dfrac{-x^2 - 17x - 11}{6x^2 + 5x + 1}$

15) $\dfrac{u^2 + 10u + 24}{5u^2 + 16u + 12}$

16) $\dfrac{6m^2 + 23m + 23}{6m^2 + 14m + 4}$