

Complex Fractions

Date _____ Period _____

Simplify each expression.

1)
$$\frac{\frac{4}{3} - \frac{3}{4}}{\frac{3}{2} - \frac{3}{4}}$$

2)
$$\frac{\frac{1}{4} + \frac{5}{4}}{\frac{5}{4}}$$

3)
$$\frac{\frac{4}{5}}{\frac{2}{25} - \frac{5}{16}}$$

4)
$$\frac{\frac{2}{3} - \frac{4}{2}}{\frac{4}{3}}$$

5)
$$\frac{\frac{x}{3} + \frac{1}{x}}{\frac{3}{x} + \frac{1}{x}}$$

6)
$$\frac{\frac{16}{m-1}}{\frac{16}{5} - \frac{16}{25}}$$

$$7) \frac{9}{\frac{9}{x} + \frac{2}{3x}}$$

$$8) \frac{a^2}{\frac{4}{5} - \frac{4}{a}}$$

$$9) \frac{\frac{x^2}{9} + \frac{1}{4}}{6x}$$

$$10) \frac{\frac{a}{8} - \frac{4}{a^2}}{4}$$

$$11) \frac{\frac{25}{12} + \frac{x+1}{4}}{\frac{1}{18} - \frac{x+1}{36}}$$

$$12) \frac{\frac{16}{m-3} - \frac{4}{m-4}}{\frac{16}{m^2} - \frac{m-4}{m-3}}$$

$$13) \frac{\frac{x-6}{6} - \frac{x-2}{x-6}}{\frac{36}{x-2} + \frac{4}{9}}$$

$$14) \frac{\frac{1}{2} - \frac{x+5}{4}}{\frac{x^2}{2} - \frac{5}{2}}$$

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Simplify each expression.

$$1) \frac{\frac{4}{3} - \frac{3}{4}}{\frac{3}{4} - \frac{3}{2}}$$
$$-\frac{16}{3}$$

$$2) \frac{\frac{1}{4} + \frac{5}{4}}{4}$$
$$\frac{3}{8}$$

$$3) \frac{\frac{4}{5}}{\frac{2}{25} - \frac{5}{16}}$$
$$-\frac{320}{93}$$

$$4) \frac{2}{\frac{3}{2} - \frac{4}{3}}$$
$$12$$

$$5) \frac{x}{\frac{3}{x} + \frac{1}{x}}$$
$$\frac{x^2}{4}$$

$$6) \frac{\frac{16}{m-1}}{\frac{16}{5} - \frac{16}{25}}$$
$$\frac{25}{4m-4} \text{ or } \frac{25}{4(m-1)}$$

$$7) \frac{9}{\frac{9}{x} + \frac{2}{3x}}$$

$$\frac{27x}{29}$$

$$8) \frac{a^2}{\frac{4}{5} - \frac{4}{a}}$$

$$\frac{5a^3}{4a-20} \text{ or } \frac{5a^3}{4(a-5)}$$

$$9) \frac{\frac{x^2}{9} + \frac{1}{4}}{6x}$$

$$\frac{4x^2 + 9}{216x}$$

$$10) \frac{\frac{a}{8} - \frac{4}{a^2}}{4}$$

$$\frac{a^3 - 32}{32a^2}$$

$$11) \frac{\frac{25}{12} + \frac{x+1}{4}}{\frac{1}{18} - \frac{x+1}{36}}$$

$$\frac{84 + 9x}{1-x}$$

$$12) \frac{\frac{16}{m-3} - \frac{4}{m-4}}{\frac{16}{m^2} - \frac{m-4}{m-3}}$$

$$\frac{12m^3 - 52m^2}{192 - 112m - m^4 + 8m^3} \text{ or } \frac{m^2(12m-52)}{(m-4)(4m^2 - m^3 + 16m - 48)}$$

$$13) \frac{\frac{x-6}{6} - \frac{x-2}{x-6}}{\frac{36}{x-2} + \frac{4}{9}}$$

$$\frac{3x^3 - 60x^2 + 252x - 288}{584x + 8x^2 - 3792}$$

$$14) \frac{\frac{1}{2} - \frac{x+5}{4}}{\frac{x^2}{2} - \frac{5}{2}}$$

$$\frac{-3-x}{2x^2-10} \text{ or } \frac{-1(3+x)}{2(x^2-5)}$$

$$\text{or}$$

$$\frac{3(x-2)(x^2-18x+48)}{8(x-6)(x+79)}$$