Complex Fractions: (also known as Compound Fractions)
Fractions whose numerators and/or denominators also have fractions.

Another Method:

Find LCM of all the denominators in the complex fraction.
Then multiply the top and bottom of the complex fraction by this LCM.

$$\frac{\left(7-\frac{3}{4}\right)}{\left(\frac{5}{2}+3\right)}\cdot\frac{4}{4}=\frac{28-3}{10+12}=\frac{25}{22}$$

Simplify:

There are many methods to do this, I'll focus on two methods.

Get ALL the terms of the complex fraction to have the LCD. Then you can cancel all of the denominators.

$$\frac{4}{4}\cdot\frac{7-\frac{3}{4}}{\frac{2}{2}\cdot\frac{5}{2}+\frac{3}{1}\cdot\frac{4}{4}}=\frac{\frac{28}{4}-\frac{3}{4}}{\frac{10}{4}+\frac{12}{4}}\qquad\frac{28-3}{10+12}=\frac{25}{22}$$

Simplify:

Cancel denominators by multiplying by the LCM of all four denominators

$$\frac{\left(\frac{2}{x}+\frac{5}{y^3}\right)}{\left(\frac{3}{x^2}-\frac{6}{y^2}\right)}\cdot\frac{x^2y^3}{x^2y^3}=\frac{2xy^3+5x^2}{3y^3-6x^2y}$$

Get all four denominators to be the same then cancel them

$$\frac{\frac{xy^3}{xy^3}\cdot\frac{2}{x}+\frac{5}{y^3}\cdot\frac{x^2}{x^2}}{\frac{y^3}{y^3}\cdot\frac{3}{x^2}-\frac{6}{y^2}\cdot\frac{2x^2}{2x^2}}=\frac{\frac{2xy^3}{x^2y^3}+\frac{5x^2}{x^2y^3}}{\frac{3y^3}{x^2y^3}-\frac{6x^2y}{x^2y^3}}=\frac{2xy^3+5x^2}{3y^3-6x^2y}$$

Simplify:

$$\frac{\left(\frac{10}{x}+\frac{4}{xy}\right)}{\left(\frac{2}{x^2y}-\frac{3}{xy^2}\right)}\cdot\frac{x^2y^2}{x^2y^2}$$

$$=\frac{10xy^2+4xy}{2y-3x}$$

Simplify:

$$\frac{\left(6+\frac{2}{x-5}\right)}{\left(\frac{1}{x-5}-8\right)}\cdot\frac{(x-5)}{x-5}$$

$$=\frac{6(x-5)+2}{1-8(x-5)}$$

$$=\frac{6x-30+2}{1-8x+40}$$

$$=\frac{6x-28}{-8x+41}$$