

Simplify each of the following:

Question 18

$$\frac{x+7}{3} + \frac{x+5}{4}$$

$$= \frac{4(x+7)}{12} + \frac{3(x+5)}{12}$$

$$= \frac{4(x+7)+3(x+5)}{12}$$

$$= \frac{4x+28+3x+15}{12}$$

$$= \frac{7x+43}{12}$$

Question 19

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

$$= \frac{4(x-1)}{20} + \frac{5(x-2)}{20}$$

$$= \frac{4(x-1)+5(x-2)}{20}$$

$$= \frac{4x-4+5x-10}{20}$$

$$= \frac{9x-14}{20}$$

Simplify each of the following:

Question 20

$$\begin{aligned} & \frac{2x+1}{4} + \frac{3x-2}{8} \\ &= \frac{2(2x+1)}{8} + \frac{3x-2}{8} \\ &= \frac{2(2x+1)+3x-2}{8} \\ &= \frac{4x+2+3x-2}{8} \\ &= \frac{7x}{8} \end{aligned}$$

Question 21

$$\begin{aligned} & \frac{5x-2}{4} + \frac{2x-6}{3} \\ &= \frac{3(5x-2)}{12} + \frac{4(2x-6)}{12} \\ &= \frac{3(5x-2)+4(2x-6)}{12} \\ &= \frac{15x-6+8x-24}{12} \\ &= \frac{23x-30}{12} \end{aligned}$$

Simplify each of the following:

Question 22

$$\begin{aligned} & \frac{x+2}{4} + \frac{3x-5}{6} \\ &= \frac{2(x+2)}{8} + \frac{2(3x-5)}{6} \\ &= \frac{2(x+2)+2(3x-5)}{6} \\ &= \frac{4x+4+6x-10}{6} \\ &= \frac{10x-6}{6} \end{aligned}$$

Question 23

$$\begin{aligned} & \frac{x+7}{1} + \frac{3x+4}{5} \\ &= \frac{5(x+7)}{5} + \frac{3x+4}{5} \\ &= \frac{5(x+7)+1(3x+4)}{5} \\ &= \frac{5x+35+3x+4}{5} \\ &= \frac{8x+39}{5} \end{aligned}$$

Simplify each of the following:

Question 24

$$\begin{aligned} & \frac{4x-1}{5} - \frac{2x+1}{2} \\ &= \frac{2(4x-1)}{10} - \frac{2(2x+1)}{10} \\ &= \frac{2(4x-1) - 2(2x+1)}{10} \\ &= \frac{8x-2-4x-2}{10} \\ &= \frac{4x-4}{10} \end{aligned}$$

Question 25

$$\begin{aligned} & \frac{2x+1}{3} - \frac{4x+3}{5} \\ &= \frac{5(2x+1)}{15} - \frac{3(4x+3)}{15} \\ &= \frac{5(2x+1) - 3(4x+3)}{15} \\ &= \frac{10x+5-12x-9}{15} \\ &= \frac{-2x-4}{15} \end{aligned}$$

Simplify each of the following:

Question 26

$$\frac{3x+2}{2} - \frac{5x-3}{3}$$

$$= \frac{3(3x+2)}{6} - \frac{2(5x-3)}{6}$$

$$= \frac{3(3x+2) - 2(5x-3)}{6}$$

$$= \frac{9x-6-10x+6}{6}$$

$$= \frac{-1x}{6}$$

Question 27

$$\frac{8x-5}{4} - \frac{2x-7}{3}$$

$$= \frac{3(8x-5)}{12} - \frac{3(2x-7)}{12}$$

$$= \frac{3(8x-5) - 3(2x-7)}{12}$$

$$= \frac{24x-15-6x+21}{12}$$

$$= \frac{18x+6}{12}$$

Simplify each of the following:

Question 28

$$\begin{aligned} & \frac{x-10}{4} - \frac{3x+12}{5} \\ &= \frac{5(x-10)}{20} - \frac{4(3x+12)}{20} \\ &= \frac{5(x-10)-4(3x+12)}{20} \\ &= \frac{5x-50-12x-48}{20} \\ &= \frac{-7x-98}{20} \end{aligned}$$

Question 29

$$\begin{aligned} & \frac{4x-16}{5} - \frac{2x-1}{1} \\ &= \frac{4x-16}{5} - \frac{5(2x-1)}{5} \\ &= \frac{4x-16-5(2x-1)}{5} \\ &= \frac{4x-16-10x+10}{5} \\ &= \frac{-6x-6}{5} \end{aligned}$$

Simplify each of the following:

$$30. \quad \frac{5x-1}{3} - \frac{3x}{1} = \frac{5x-1}{3} - \frac{9x}{3} = \frac{5x-1-9x}{3} = \frac{-4x-1}{3}$$

$$\begin{aligned} 31. \quad \frac{x+3}{2} - \frac{4x+1}{4} + \frac{1}{3} &= \frac{6(x+3)}{12} - \frac{3(4x+1)}{12} + \frac{4}{12} \\ &= \frac{6(x+3) - 3(4x+1) + 4}{12} \\ &= \frac{6x+18-12x-3+4}{12} \\ &= \frac{-6x+19}{12} \end{aligned}$$

Simplify each of the following:

$$\begin{aligned} 32. \quad \frac{x-2}{4} + \frac{2x+1}{8} - \frac{2}{3} &= \frac{6(x-2)}{24} - \frac{3(2x+1)}{24} - \frac{16}{24} \\ &= \frac{6(x-2) - 3(2x+1) - 16}{24} \\ &= \frac{6x - 12 - 6x - 3 - 16}{24} \\ &= \frac{-31}{24} \end{aligned}$$