1. $\frac{3}{8} + \frac{1}{6}$

8 multiples: 8, 16, 24, 32, 40...

6 multiples: 6, 12, 18, 24, 30...

the LCM is 24.

(or) $LCM = \frac{8 \times 6}{GCD(8,6)} = \frac{48}{GCD(8,6)}$

$= \frac{48}{2} = 24$. So we have to do

$\frac{3}{8} + \frac{1}{6} = \frac{3}{8} \times \frac{3}{3} + \frac{1}{6} \times \frac{4}{4} = \frac{9}{24} + \frac{4}{24} = \frac{13}{24}$.

2. $\frac{5}{9} - \frac{1}{3}$

9 multiples: 9, 18, 27, 36, 45 ...

3 multiples: 3, 6, 9, 12, 15 ...

the LCM is 9.

(or) LCM $= \underbrace{9 \times 3}_{GCD(9,3)} = \underbrace{27}_{GCD(9,3)} = \frac{27}{3} = 9.$

So, we have todo $\frac{5}{9} \times \frac{1}{1} + \frac{1}{3} \times \frac{3}{3} = \frac{5}{9} + \frac{3}{9} = \frac{8}{9}.$

$\frac{5}{9} - \frac{3}{9} = \frac{2}{9}$

3. $\frac{7}{12} + \frac{5}{18}$

12 multiples: 12, 24, 36, 48, 60...

18 multiples: 18, 36, 54, 72, 90...

the LCM is 36.

(or) $LCM = \frac{12 \times 18}{GCD(12,18)} = \frac{216}{6} = 36$

So, we have todo

$\frac{7}{12} \times \frac{3}{3} + \frac{5}{18} \times \frac{2}{2}$

$= \frac{21}{36} + \frac{10}{36}$

$= \frac{31}{36}$

GCD

$12\overline{)18}\,1$

$\frac{12}{06})12(2$

$\frac{12}{00}$

$6\overline{)216}\,36$

$\frac{18}{36}$

$\frac{36}{00}$

4. $\frac{11}{10} - \frac{3}{4}$

10 multiples: 10, 20, 30, 40, 50...

4 multiples: 4, 8, 12, 16, 20...

the LCM is 20.

(or) the $LCM = \frac{10 \times 4}{GCD(10,4)} = \frac{40}{2} = 20$

So, we have to do

$\frac{11}{10} \times \frac{2}{2} - \frac{3}{4} \times \frac{5}{5}$

$= \frac{22}{20} - \frac{15}{20}$

$= \frac{7}{20}$

5. $\frac{2}{5} + \frac{7}{15}$

multiples of 5: 5, 10, 15, 20, 25...

multiples of 15: 15, 30, 45, 60, 75...

the LCM is 15.

(or) $LCM = \frac{5 \times 15}{GCD(5,15)} = \frac{75}{5} = 15$. so, we have to do

$\frac{2}{5} \times \frac{3}{3} + \frac{7}{15} \times \frac{1}{1} = \frac{6}{15} + \frac{7}{15} = \frac{13}{15}$

6. $\frac{9}{14} - \frac{2}{7}$

multiples of 14: 14, 28, 42, 56, 70...

multiples of 7: 7, 14, 21, 28, 35...

the LCM is 14.

(or) the LCM = $\frac{14 \times 7}{GCD(14,7)} = \frac{98}{7} = 14$. So, We have to do

$\frac{9}{14} \times \frac{1}{1} - \frac{2}{7} \times \frac{2}{2} = \frac{9}{14} + \frac{4}{14} = \frac{13}{14}$.

~~$\frac{13}{14}$~~ $\frac{5}{14}$

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

multiples of 2: 2, 4, 6, 8, 10 ...
multiples of 5: 5, 10, 15, 20, 25 ...
multiples of 10: 10, 20, 30, 40, 50 ...
the LCM is 10.

(or) $LCM = \frac{2 \times 5 \times 10}{GCD(2,5,10)} = \frac{100}{10} = 10.$ (I do not know if the result is correct or not)

$\frac{1}{2} \times \frac{5}{5} + \frac{3}{5} \times \frac{2}{2} + \frac{1}{10} \times \frac{1}{1} = \frac{5}{10} + \frac{6}{10} + \frac{1}{10} = \frac{11}{10}$.

$= \frac{12}{10} = \frac{6}{5}$

(1) Find LCM(2,5) = l
(2) Find LCM(l, 10)
= LCM(2,5,10)

$8\ \frac{13}{20}\ -\frac{3}{8}$

multiples of 20: 20, 40, 60, 80 100...

multiples of 8: 8, 16, 24, 32, 40 ...

the LCM is 40.

(or) $LCM = \frac{20 \times 8}{GCD(20,8)} = \frac{160}{4} = 40.$

so, we have to do

$\frac{13}{20} \times \frac{2}{2} + \frac{3}{8} \times \frac{5}{5} = \frac{26}{40} + \frac{15}{40} = \frac{41}{40}$ ✗

$\frac{26}{40} - \frac{15}{40} = \frac{11}{40}$

9. $\frac{5}{6} + \frac{7}{9}$

multiples of 6: 6, 12, 18, 24, 30 ...

multiples of 9: 9, 18, 27, 36, 45 ...

the LCM is 18.

(or) LCM $= \frac{6 \times 9}{GCD(6,9)} = \frac{54}{3} = 18$. So, we have to do

$\frac{5}{6} \times \frac{3}{3} + \frac{7}{9} \times \frac{2}{2} = \frac{15}{18} + \frac{14}{18} = \frac{29}{18}$

10. $\frac{17}{24} + \frac{5}{16}$ $\quad\quad$ $\frac{17}{24} - \frac{5}{16}$

multiples of 24: 24, 48, 72, 96, 120 ...

multiples of 16: 16, 32, 48, 64, 80 ...

the LCM is 48.

(or) $LCM = \frac{24 \times 16}{GCD(24,16)} = \frac{384}{8} = 48.$

So, we have to do

$\frac{17}{24} \times \frac{2}{2} + \frac{5}{16} \times \frac{3}{3} = \frac{34}{48} + \frac{15}{48} = \frac{49}{48}.$

$\frac{34}{48} - \frac{15}{48} = \frac{19}{48}$