

NS8-19 Adding and Subtracting Mixed Numbers

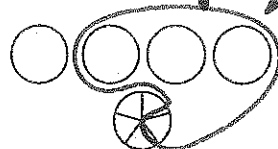
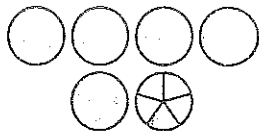
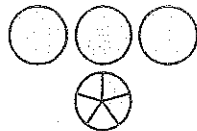
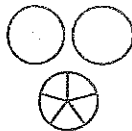
1. Add or subtract.

a) $2\frac{1}{5} + 3\frac{2}{5} =$

$5\frac{3}{5}$

b) $4\frac{3}{5} - 3\frac{1}{5} =$

$1\frac{2}{5}$



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

d) $3\frac{3}{7} + 2\frac{1}{7} = 5\frac{4}{7}$

e) $5\frac{7}{8} - 3\frac{2}{8} = 2\frac{5}{8}$

f) $7\frac{9}{15} - 4\frac{2}{15} = 3\frac{7}{15}$

2. Add or subtract by changing the fractions to equivalent fractions.

a) $2\frac{1}{2} + 1\frac{1}{3}$

$= 2 + 1 + \frac{1}{2} + \frac{1}{3}$
 $= 3 + \frac{3}{6} + \frac{2}{6}$
 $= 3\frac{5}{6}$

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

$= 3 - 1 + \frac{3}{4} - \frac{1}{3}$
 $= 2 + \frac{9}{12} - \frac{4}{12}$
 $= 2\frac{5}{12}$

c) $5\frac{2}{3} - 2\frac{3}{5}$

$3\frac{1}{15}$

d) $2\frac{2}{7} + 4\frac{1}{2}$

$6\frac{4}{14}$

e) $4\frac{2}{5} - 1\frac{1}{6}$

$3\frac{7}{30}$

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

$6\frac{17}{24}$

3. $1\frac{1}{2} + 2\frac{2}{3} = 3\frac{7}{6}$. How can you simplify this answer?

$4\frac{1}{6}$

4. $\frac{4}{5}$ is greater than $\frac{1}{3}$. How can you subtract $4\frac{1}{3} - 2\frac{4}{5}$?

Since $4\frac{1}{3} = 3\frac{4}{3}$, you can start from $3\frac{4}{3} - 2\frac{4}{5}$

5. a) Change the improper fractions to mixed numbers.

i) $\frac{7}{6} = 1\frac{1}{6}$

ii) $\frac{11}{5} = 2\frac{1}{5}$

iii) $\frac{13}{7} = 1\frac{6}{7}$

iv) $\frac{11}{4} = 2\frac{3}{4}$

b) Rewrite each mixed number to make the improper fraction a proper fraction.

i) $3\frac{7}{6} = 3 + \frac{7}{6}$
 $= 3 + 1\frac{1}{6}$
 $= 4\frac{1}{6}$

ii) $2\frac{4}{3} = 2 + \frac{4}{3}$
 $= 2 + 1\frac{1}{3}$
 $= 3\frac{1}{3}$

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

c) Add by changing the fractions to equivalent fractions. Simplify your answer as in part b).

i) $2\frac{2}{5} + \frac{2}{3}$

$= 2 + \frac{2}{5} + \frac{2}{3}$

$= 2 + \frac{6}{15} + \frac{10}{15}$

$= 2\frac{16}{15} = 3\frac{1}{15}$

ii) $3\frac{2}{3} + \frac{5}{6}$

$3\frac{4}{6} + \frac{5}{6} = 4\frac{1}{6}$

iii) $4\frac{3}{4} + 2\frac{3}{5}$

$6\frac{15}{20} + 2\frac{12}{20} = 8\frac{27}{20} = 9\frac{7}{20}$

6. a) Rewrite each mixed number by regrouping 1 whole as a fraction.

Example: $4\frac{1}{3} = 3 + 1\frac{1}{3} = 3\frac{4}{3}$

i) $5\frac{3}{4} = 4\frac{7}{4}$ ii) $5\frac{1}{2} = 4\frac{3}{2}$ iii) $1\frac{1}{6} = \frac{7}{6}$ iv) $2\frac{3}{4} = 1\frac{7}{4}$ v) $3\frac{2}{5} = 2\frac{7}{5}$ vi) $4\frac{5}{7} = 3\frac{12}{7}$

b) Subtract by rewriting the first mixed number as in part a):

i) $3\frac{1}{5} - 1\frac{3}{4} = 3\frac{4}{20} - 1\frac{15}{20}$

$= 2\frac{24}{20} - 1\frac{15}{20} = 1\frac{9}{20}$

ii) $4\frac{1}{3} - 2\frac{3}{5}$

$= 1\frac{11}{15}$

7. Add or subtract by first changing the mixed numbers to improper fractions.

a) $3\frac{1}{3} + 5\frac{3}{4}$

$= \frac{10}{3} + \frac{23}{4}$

$= \frac{40}{12} + \frac{69}{12}$

$= \frac{109}{12} = 9\frac{1}{12}$

b) $1\frac{1}{5} - \frac{2}{3}$

$\frac{8}{15}$

c) $4\frac{2}{3} + 2\frac{4}{5}$

$7\frac{7}{15}$

d) $5\frac{1}{8} - 3\frac{1}{3}$

$1\frac{19}{24}$

8. Sonjay cycled $6\frac{7}{8}$ km in the first hour, $5\frac{1}{2}$ km the second hour, and $4\frac{3}{4}$ km the third hour. How many kilometres did he cycle in the three hours?

$17\frac{1}{8}$ km

9. A cafeteria sold $2\frac{5}{8}$ cheese pizzas, $4\frac{1}{3}$ vegetable pizzas, and $3\frac{1}{4}$ deluxe pizzas at lunchtime. How many pizzas did they sell altogether?

$10\frac{5}{24}$ pizzas

10. Gerome bought $5\frac{3}{4}$ metres of cloth. He used $3\frac{4}{5}$ to make a banner. How many metres of cloth were left over?

$1\frac{11}{20}$ m