Exercise 11

Subtracting Unlike Fractions and Mixed Numbers

Subtract unlike fractions and mixed numbers by first finding a common denominator.

Subtract. $\frac{2}{3} - \frac{1}{6}$

Rewrite the fractions using the LCD.

$\frac{2}{3} \rightarrow \frac{4}{6}$

$\frac{1}{6} \rightarrow \frac{1}{6}$

Subtract the numerators.

$\frac{4-1}{6} = \frac{3}{6}$

Reduce to lowest terms.

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

Subtract. $3\frac{1}{4} - 1\frac{2}{3}$

Rewrite the fractions using the LCD.

$3\frac{1}{4} \rightarrow 3\frac{3}{12}$

$1\frac{2}{3} \rightarrow 1\frac{8}{12}$

Regroup $3\frac{3}{12}$ to borrow.

$3\frac{3}{12} = 2\frac{15}{12}$

Subtract the whole numbers. Subtract the fractions.

$$\begin{array}{r} 2\frac{15}{12} \\ -\,1\frac{8}{12} \\ \hline 1\frac{7}{12} \end{array}$$

Subtract the fractions. Reduce your answer to lowest terms.

1. $\frac{2}{3} - \frac{1}{2} =$

2. $\frac{8}{12} - \frac{3}{6} =$

3. $\frac{3}{4} - \frac{3}{5} =$

4. $\frac{6}{8} - \frac{1}{5} =$

5. $\frac{7}{8} - \frac{2}{4} =$

6. $\frac{9}{10} - \frac{2}{5} =$

7. $\frac{2}{3} - \frac{9}{16} =$

8. $\frac{6}{7} - \frac{3}{8} =$

Subtract the mixed numbers. Reduce your answer to lowest terms.

9. $10\frac{1}{2} - 3\frac{1}{16}$

10. $14\frac{2}{3} - 5\frac{6}{7}$

11. $7\frac{3}{4} - 3\frac{2}{5}$

12. $8\frac{7}{8} - 2\frac{3}{4}$

13. $18\frac{7}{10} - 5\frac{3}{8}$

Solve.

14. Sarah and Gary are office assistants. Sarah spends $3\frac{1}{4}$ hours of the day working at a computer. Gary spends $2\frac{7}{8}$ hours of the day working at a computer.

How much more time does Sarah spend on the computer than Gary? _____

Directions: Choose the one best answer to each item. Circle the number of the correct answer.

Items 15 through 17 refer to the following chart. The chart shows how much of the total dollar amount was spent at the Fun Fair.

FUN FAIR	ALLOTTED FUNDS
Purchase of Equipment	$\frac{1}{2}$
Purchase of Tickets	$\frac{1}{12}$
Purchase of Prizes	$\frac{2}{8}$
Purchase of Advertising	$\frac{1}{6}$

15. How much more of the allotted funds will go toward equipment than advertising?

(1) $\frac{8}{12}$
(2) $\frac{1}{12}$
(3) $\frac{1}{3}$
(4) $\frac{1}{2}$
(5) $\frac{2}{12}$

16. What is the difference between the part of the funds used for the purchase of prizes and the purchase of tickets?

(1) $\frac{2}{24}$
(2) $\frac{1}{12}$
(3) $\frac{1}{6}$
(4) $\frac{10}{24}$
(5) $\frac{8}{24}$

17. What is the difference between the fraction of funds allotted for the most costly purchase and the least costly purchase?

(1) $\frac{7}{12}$
(2) $\frac{5}{12}$
(3) $\frac{4}{12}$
(4) $\frac{1}{12}$
(5) $\frac{3}{12}$

18. A lasagna recipe calls for $\frac{1}{2}$ part noodles, $\frac{1}{8}$ part meat, and $\frac{1}{4}$ part cheese, and the rest is sauce. What part is the sauce?

(1) $\frac{3}{8}$
(2) $\frac{1}{4}$
(3) $\frac{1}{8}$
(4) $\frac{3}{16}$
(5) $\frac{7}{8}$

19. Cara went on a 25-mile bike tour. She rode for $16\frac{2}{3}$ miles on country roads. The remaining miles were on city streets. How many miles did Cara ride on city streets?

(1) $9\frac{2}{3}$ miles
(2) $8\frac{5}{3}$ miles
(3) $8\frac{1}{3}$ miles
(4) 8 miles
(5) $7\frac{1}{2}$ miles

20. The Perera family spends an average of about $\frac{1}{4}$ of its grocery bill on cleaning supplies, $\frac{1}{8}$ on paper goods, and $\frac{2}{5}$ on meats and vegetables. What fraction is the rest of the family's bill?

(1) $\frac{31}{40}$
(2) $\frac{9}{40}$
(3) $\frac{10}{40}$
(4) $\frac{5}{40}$
(5) $\frac{16}{40}$

21. In item 20, how much more do the Perera's spend on meats and vegetables then on cleaning supplies?

(1) $\frac{1}{20}$
(2) $\frac{3}{20}$
(3) $\frac{1}{2}$
(4) $\frac{1}{5}$
(5) $\frac{1}{4}$