# Section 1.4 Exercises Part A

**Find 4 different names for each fraction:**

Example:

$\frac{3}{11}$ ⟶ $\frac{3}{11}, \frac{6}{22}, \frac{9}{33}, \frac{12}{44}, \frac{15}{55}, \frac{30}{110}, \frac{3{,}000}{11{,}000} \ldots$

**1.** $\frac{3}{7}$ **2.** $\frac{2}{3}$ **3.** $\frac{7}{11}$ **4.** $\frac{4}{9}$

**Simplify each fraction.**

**5.** $\frac{36}{52}$ **6.** $\frac{27}{36}$ **7.** $\frac{16}{56}$

**8.** $\frac{10}{12}$ **9.** $\frac{15}{45}$ **10.** $\frac{120}{280}$

**Create each fraction with a denominator of 36.**

**11.** $\frac{1}{6}$ **12.** $\frac{5}{9}$ **13.** $\frac{10}{12}$

**Add or Subtract. Simplify.**

Example:

$\frac{1}{2} + \frac{3}{7} =$

$\frac{7}{14} + \frac{6}{14} = \frac{13}{14}$

Example:

$5\frac{3}{8} - 13\frac{1}{4}$ ⟶

$-13\frac{1}{4}$ → $-13\frac{2}{8}$ → $-12\frac{10}{8}$

$5\frac{3}{8}$ $5\frac{3}{8}$ $5\frac{3}{8}$

$-7\frac{7}{8}$

Common denominator

Borrow from the 13.

Swap to subtract.

Answer is negative

**14.** $\frac{2}{5} + \frac{2}{3} =$ **15.** $\frac{1}{4} + \frac{5}{8} =$ **16.** $\frac{7}{30} - \frac{3}{25} =$

**17.** $\frac{1}{3} + \frac{7}{12} =$ **18.** $13\frac{3}{4} + 4\frac{5}{6} =$ **19.** $9\frac{7}{10} - 3\frac{1}{5} =$

**20.** $3\frac{9}{14} - 6\frac{6}{7} =$ **21.** $4\frac{2}{7} + 9\frac{2}{3} =$ **22.** $12\frac{5}{8} - 9\frac{3}{4} =$

**Fill out the table.**

| | Mixed | Improper |
|---|---|---|
| **23.** | $-7\frac{8}{9}$ | |
| **24.** | $3\frac{1}{5}$ | |
| **25.** | | $\frac{43}{8}$ |
| **26.** | | $\frac{51}{4}$ |

**Find the multiplicative inverse or reciprocal of each number.**

Example:
$\frac{5}{8}$ $\frac{8}{5}$

**27.** $\frac{4}{7}$ **28.** $\frac{2}{9}$ **29.** $-\frac{7}{10}$ **30.** $\frac{7}{8}$

**31.** $-\frac{5}{6}$ **32.** 13 **33.** $\frac{13}{42}$ **34.** $\frac{7}{3}$

**Divide.**

Example:

| | |
|---|---|
| $2\frac{3}{8} \div \frac{4}{5} =$ | |
| $2\frac{3}{8} \times \frac{5}{4} =$ | Multiply by reciprocal |
| $\frac{19}{8} \times \frac{5}{4} =$ | Change to improper fraction |
| $\frac{19}{8} \times \frac{5}{4} = \frac{95}{32}$ or $2\frac{31}{32}$ | Multiply straight across. |

**35.** $\frac{2}{5} \div \frac{1}{3} =$ **36.** $\frac{1}{4} \div \frac{3}{8} =$ **37.** $\frac{5}{6} \div \frac{3}{8} =$

**38.** $\frac{3}{8} \div \frac{7}{12} =$ **39.** $2\frac{3}{4} \div 7\frac{1}{6} =$ **40.** $5\frac{5}{7} \div 3\frac{2}{3} =$

**41.** $7\frac{4}{5} \div \frac{9}{10} =$ **42.** $\frac{7}{8} \div 9\frac{2}{3} =$ **43.** $2\frac{1}{6} \div \frac{3}{8} =$

**Preparation**.

**44.** If you drive 280 miles on 12 gallons of gas, how many miles per gallon do you get?

**45.** If you drive 280 miles on 12 gallons of gas, and gas is $3.20 per gallon, how many miles per dollar do you get?

Answers:

**1.** $\frac{6}{14}, \frac{9}{21}, \frac{12}{28}, \frac{21}{49}, \textit{others...}$

**2.** $\frac{4}{6}, \frac{6}{9}, \frac{10}{15}, \frac{12}{18}, \textit{others...}$

**3.** $\frac{14}{22}, \frac{21}{33}, \frac{28}{44}, \frac{35}{55}, \textit{others...}$

**4.** $\frac{8}{18}, \frac{12}{27}, \frac{16}{36}, \frac{28}{63}, \textit{others...}$

**5.** $\frac{9}{13}$

**6.** $\frac{3}{4}$

**7.** $\frac{2}{7}$

**8.** $\frac{5}{6}$

**9.** $\frac{1}{3}$

**10.** $\frac{3}{7}$

**11.** $\frac{6}{36}$

**12.** $\frac{20}{36}$

**13.** $\frac{30}{36}$

**14.** $1\frac{1}{15}$ or $\frac{16}{15}$

**15.** $\frac{7}{8}$

**16.** $\frac{17}{150}$

**17.** $\frac{11}{12}$

**18.** $18\frac{7}{12}$

**19.** $6\frac{1}{2}$

**20.** $-3\frac{3}{14}$

**21.** $13\frac{20}{21}$

**22.** $2\frac{7}{8}$

**23.** $-\frac{71}{9}$

**24.** $\frac{16}{5}$

**25.** $5\frac{3}{8}$

**26.** $12\frac{3}{4}$

**27.** $\frac{7}{4}$ or $1\frac{3}{4}$

**28.** $\frac{9}{2}$ or $4\frac{1}{2}$

**29.** $-\frac{10}{7}$ or $-1\frac{3}{7}$

**30.** $\frac{8}{7}$

**31.** $-\frac{6}{5}$ or $-1\frac{1}{5}$

**32.** $\frac{1}{13}$

**33.** $\frac{42}{13}$ or $3\frac{3}{13}$

**34.** $\frac{3}{7}$

**35.** $\frac{6}{5}$ or $1\frac{1}{5}$

**36.** $\frac{2}{3}$

**37.** $\frac{20}{9}$ or $2\frac{2}{9}$

**38.** $\frac{9}{14}$

**39.** $\frac{33}{86}$

**40.** $\frac{120}{77}$ or $1\frac{43}{77}$

**41.** $\frac{26}{3}$ or $8\frac{2}{3}$

**42.** $\frac{21}{232}$

**43.** $\frac{52}{9}$ or $5\frac{7}{9}$

**44.** $23\frac{1}{3}$

**45.** $7\frac{7}{24}$