

Chapter 5: Fractions

Warm-up

- 15 days = $15 \div 7 = 2$ weeks 1 day.
 - 43 eggs = $43 \div 12 = 3$ dozen and 7 eggs.
 - 34 hours = $34 \div 24 = 1$ day 10 hours.
- (d)
- Recycling paper products more than the other products = $1 - \left(\frac{2}{14} + \frac{4}{14} + \frac{5}{14} + \frac{2}{14} + \frac{1}{14} \right) = 1 - \frac{14}{14} = 0$.

Class Work (Pg 71)

- $6\frac{2}{5} = \frac{6 \times 5 + 2}{5} = \frac{32}{5}$
- $11\frac{4}{7} = \frac{11 \times 7 + 4}{7} = \frac{81}{7}$
- $\frac{24}{5} = 4\frac{4}{5}$
- $\frac{42}{11} = 3\frac{9}{11}$

Exercise 5A

- $\frac{11}{4} = \frac{2}{8}$
 - $\frac{2}{5} = \frac{4}{10} = \frac{6}{15} = \frac{8}{20}$
 - $\frac{4}{6}$
 - $\frac{5}{10}$
 - $\frac{3}{14}$
 - $\left(\frac{117}{143} \div \frac{13}{13} = \frac{9}{11} \right)$
 - $\left(\frac{3}{4} \neq \frac{8}{12} \neq \frac{2}{3} \right)$

Class Work (Pg 74)

- $\frac{16}{18} = \frac{8}{9}$
- $\frac{60}{105} = \frac{4}{7}$
- $\frac{84}{98} = \frac{6}{7}$
- $\frac{55}{70} = \frac{11}{14}$

Exercise 5B

- $\frac{4}{9} < \frac{7}{9}$
 - $\frac{1}{8} > \frac{1}{21}$
 - $\frac{6}{7} < 1$
 - $\frac{1}{4} > \frac{1}{5}$
 - $\frac{5}{7} > \frac{3}{14}$
 - $\frac{1}{10} < \frac{4}{5}$
 - $\frac{13}{20} < \frac{18}{25}$
 - $\frac{28}{41} > \frac{11}{24}$

$$2. (a) \frac{13}{28}, \frac{11}{14}, \frac{9}{14}, \frac{2}{7} = \frac{13, 22, 18, 8}{28}, \frac{2}{7}, \frac{13}{28}, \frac{9}{14}, \frac{11}{14}$$

$$(b) \frac{5}{12}, \frac{3}{4}, \frac{9}{16}, \frac{7}{8} = \frac{20, 36, 27, 42}{48}, \frac{5}{12}, \frac{9}{16}, \frac{3}{4}, \frac{7}{8}$$

$$3. (a) \frac{4}{5}, \frac{3}{10}, \frac{7}{20}, \frac{17}{30} = \frac{48, 18, 21, 34}{60}, \frac{4}{5}, \frac{17}{30}, \frac{7}{20}, \frac{3}{10}$$

$$(b) \frac{5}{6}, \frac{2}{3}, \frac{7}{18}, \frac{11}{12} = \frac{30, 24, 14, 33}{36}, \frac{11}{12}, \frac{5}{6}, \frac{2}{3}, \frac{7}{18}$$

$$4. \text{Recipe A} - \frac{3}{4} \text{ cups, Recipe B} - \frac{2}{3} \text{ cups, Recipe C} - \frac{4}{5} \text{ cups}$$

$$\frac{3}{4}, \frac{2}{3}, \frac{4}{5} = \frac{45, 40, 48}{60}, \text{Recipe C needs the most and Recipe B needs the least flour.}$$

5. (b)

Class Work (Pg 78)

$$1. \frac{5}{21} + \frac{2}{21} = \frac{7}{21} = \frac{1}{3}$$

$$2. \frac{2}{11} + \frac{5}{11} + \frac{4}{11} = \frac{11}{11} = 1$$

$$3. \frac{11}{30} - \frac{5}{30} = \frac{6}{30} = \frac{1}{5}$$

$$4. \frac{19}{25} - \frac{6}{25} - \frac{3}{25} = \frac{10}{25} = \frac{2}{5}$$

Class Work (Pg 80)

$$1. (a) \frac{1}{2} + \frac{1}{6} = \frac{1 \times 3 + 1 \times 1}{6} = \frac{3+1}{6} = \frac{4}{6} = \frac{2}{3}$$

$$(b) \frac{1}{5} + \frac{2}{3} = \frac{1 \times 3 + 2 \times 5}{15} = \frac{13}{15}$$

$$2. (a) \frac{7}{12} - \frac{4}{9} = \frac{7 \times 3 - 4 \times 4}{36} = \frac{21-16}{36} = \frac{5}{36}$$

$$(b) \frac{8}{9} - \frac{1}{3} = \frac{8 \times 1 - 1 \times 3}{9} = \frac{5}{9}$$

Exercise 5C

$$1. (a) \frac{2}{5} + \frac{1}{10} = \frac{2 \times 2 + 1 \times 1}{10} = \frac{5}{10} = \frac{1}{2}$$

$$(b) \frac{2}{3} + \frac{1}{6} = \frac{2 \times 2 + 1 \times 1}{6} = \frac{5}{6}$$

$$(c) \frac{5}{9} + \frac{1}{3} = \frac{5 \times 1 + 1 \times 3}{9} = \frac{8}{9}$$

$$(d) \frac{5}{12} + \frac{1}{2} = \frac{5 \times 1 + 1 \times 6}{12} = \frac{11}{12}$$

$$(c) \frac{5}{16} + \frac{7}{18} = \frac{5 \times 9 + 7 \times 8}{144} = \frac{45 + 56}{144} = \frac{101}{144}$$

$$(f) \frac{1}{3} + \frac{1}{2} + \frac{1}{12} = \frac{1 \times 4 + 1 \times 6 + 1 \times 1}{12} = \frac{11}{12}$$

$$(g) \frac{3}{5} + \frac{7}{10} + \frac{1}{2} = \frac{3 \times 2 + 7 \times 1 + 1 \times 5}{10} = \frac{18}{10} = \frac{9}{5} = 1\frac{4}{5}$$

$$(h) \frac{2}{5} + \frac{4}{15} + \frac{3}{10} = \frac{2 \times 6 + 4 \times 2 + 3 \times 3}{30} = \frac{29}{30}$$

$$(i) \frac{2}{3} + \frac{3}{4} + \frac{9}{12} = \frac{2 \times 4 + 3 \times 3 + 9 \times 1}{12} = \frac{26}{12} = 2\frac{1}{6}$$

$$(j) \frac{5}{14} + \frac{19}{21} + \frac{47}{84} = \frac{5 \times 6 + 19 \times 4 + 47}{84} = \frac{30 + 76 + 47}{84} = \frac{153}{84} = 1\frac{23}{28}$$

$$2. (a) \frac{1}{3} - \frac{1}{4} = \frac{1 \times 4 - 1 \times 3}{12} = \frac{1}{12}$$

$$(b) \frac{7}{8} - \frac{5}{12} = \frac{7 \times 3 - 5 \times 2}{24} = \frac{21 - 10}{24} = \frac{11}{24}$$

$$(c) \frac{9}{10} - \frac{11}{20} = \frac{9 \times 2 - 11}{20} = \frac{18 - 11}{20} = \frac{7}{20}$$

$$(d) \frac{11}{12} - \frac{5}{9} = \frac{11 \times 3 - 5 \times 4}{36} = \frac{33 - 20}{36} = \frac{13}{36}$$

$$(e) \frac{5}{12} - \frac{3}{16} = \frac{5 \times 4 - 3 \times 3}{48} = \frac{20 - 9}{48} = \frac{11}{48}$$

$$(f) \frac{3}{14} - \frac{4}{21} = \frac{3 \times 3 - 4 \times 2}{42} = \frac{9 - 8}{42} = \frac{1}{42}$$

$$(g) \frac{17}{24} - \frac{19}{36} = \frac{17 \times 3 - 19 \times 2}{72} = \frac{51 - 38}{72} = \frac{13}{72}$$

$$(h) \frac{9}{10} - \frac{1}{5} - \frac{1}{2} = \frac{9 \times 1 - 1 \times 2 - 1 \times 5}{10} = \frac{9 - 2 - 5}{10} = \frac{2}{10} = \frac{1}{5}$$

$$(i) \frac{5}{9} - \frac{1}{3} - \frac{1}{6} = \frac{5 \times 2 - 1 \times 6 - 1 \times 3}{18} = \frac{10 - 6 - 3}{18} = \frac{1}{18}$$

$$(j) \frac{11}{15} - \frac{2}{5} - \frac{1}{3} = \frac{11 \times 1 - 2 \times 3 - 1 \times 5}{15} = \frac{11 - 6 - 5}{15} = \frac{0}{15} = 0$$

3. (d)