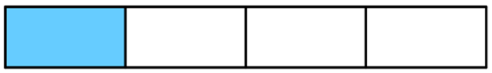
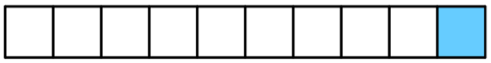
PART A

1) State the unit fraction that is represented in each diagram.

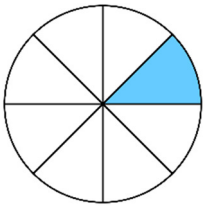
a)



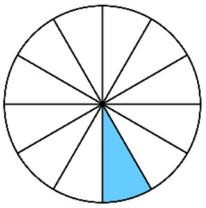
b)



c)



d)



2) Explain why $\frac{1}{5}$ is less than $\frac{1}{4}$.

3) Place a greater than sign (>) or less than sign (<) between each pair of fractions to make a true statement.

a) $\frac{1}{2} \square \frac{1}{3}$ b) $\frac{1}{6} \square \frac{1}{4}$ c) $\frac{1}{10} \square \frac{1}{3}$ d) $\frac{1}{40} \square \frac{1}{50}$ e) $\frac{1}{25} \square \frac{1}{24}$

4) Order the following unit fractions from least to greatest.

$$\frac{1}{5}, \frac{1}{9}, \frac{1}{2}, \frac{1}{11}, \frac{1}{4}, \frac{1}{20}, \frac{1}{100}$$

5) A set of measuring spoons contains spoons for fractions of a teaspoon (tsp). These spoons have the following labels:

$$\frac{1}{4} \text{ tsp}, \frac{1}{2} \text{ tsp}, \frac{1}{8} \text{ tsp}$$

a) Which of these spoons will hold the most? Which will hold the least?
b) Use a visual representation to determine how many scoops from the smallest spoon are needed to equal one scoop from the largest spoon.

6) Determine the value of each of the following.

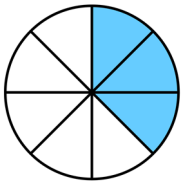
a) $\frac{1}{2}$ of 80 b) $\frac{1}{3}$ of 60 c) $\frac{1}{5}$ of 100 d) $\frac{1}{10}$ of 240 e) $\frac{1}{9}$ of 117 f) $\frac{1}{7}$ of 224

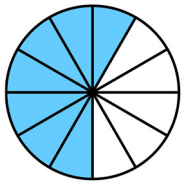
7) Blair visited Nunavut for 24 days to learn about the territory's rich traditions of art and creativity. He spent half of his time in Iqaluit, where he attended the Nunavut Arts Festival. He spent one third of his visit in the community of Arviat, which is well known for its artistic qualities.

a) How many days did Blair spend in Iqaluit?
b) How many days did he spend in Arviat?
c) How many days of Blair's visit to Nunavut were spent in places other than Iqaluit and Arviat?

PART B

8) State the fraction represented by the shaded portion in each diagram.

a) 

b) 

c) 

d) 

9) When purchasing drywall to finish her basement, Ariel could choose sheets of either 3/8 inch thickness or 1/2 inch thickness.
   a) Use a visual representation to determine which option has the greater thickness.
   b) Use your visual representation to determine the difference between the two thicknesses.

10) Use a visual representation to show why $\frac{6}{8}$ is equivalent to $\frac{3}{4}$.

11) Write an equivalent fraction using the given description.

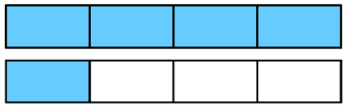
a) $\frac{1}{2}$ using a denominator of 6

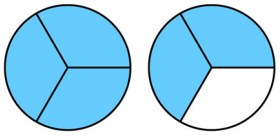
b) $\frac{2}{3}$ using a numerator of 8

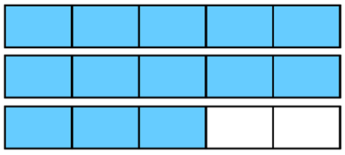
c) $\frac{4}{10}$ using a denominator of 5

d) $\frac{16}{24}$ using a denominator of 3

12) State the improper fraction represented by the shaded portion in each diagram.

a) 

b) 

c) 

13) Place a greater than sign (>) or less than sign (<) between each pair of fractions to make a true statement.

a) $\frac{1}{3} \square \frac{2}{3}$ b) $\frac{3}{4} \square \frac{3}{5}$ c) $\frac{5}{2} \square \frac{7}{2}$ d) $\frac{5}{4} \square \frac{5}{3}$ e) $\frac{1}{4} \square \frac{5}{12}$

f) $\frac{2}{5} \square \frac{1}{3}$ g) $\frac{1}{7} \square \frac{3}{10}$ h) $\frac{2}{3} \square \frac{3}{4}$ i) $\frac{6}{5} \square \frac{4}{3}$ j) $\frac{10}{3} \square \frac{13}{4}$

14) State all of the following that are equivalent to $-\frac{4}{5}$: $\frac{-4}{5}, \frac{-4}{-5}, \frac{4}{5}, \frac{4}{-5}$

15) State all of the following are equivalent to $\frac{3}{2}$: $-\frac{3}{2}, \frac{3}{-2}, \frac{-3}{2}, \frac{-3}{-2}$

16) Express each fraction in reduced form (lowest terms).

a) $\frac{4}{6}$ b) $\frac{9}{12}$ c) $\frac{20}{15}$ d) $\frac{18}{60}$ e) $-\frac{22}{44}$ f) $-\frac{7}{21}$ g) $-\frac{24}{16}$

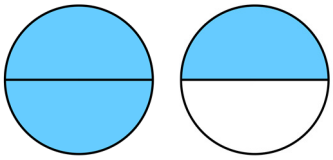
17) Order each the following from least to greatest.

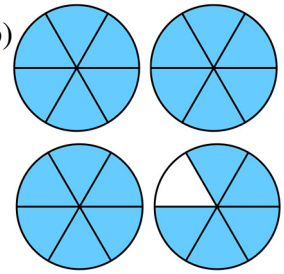
a) $\frac{4}{7}, \frac{3}{7}, \frac{9}{7}, \frac{2}{7}, \frac{8}{7}$ b) $\frac{3}{5}, \frac{3}{2}, \frac{3}{4}, \frac{3}{7}, \frac{3}{11}$ c) $\frac{2}{3}, \frac{1}{3}, \frac{6}{12}, \frac{3}{4}, \frac{5}{6}$

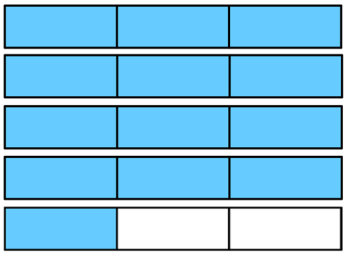
d) $\frac{1}{5}, \frac{2}{5}, -\frac{1}{5}, -\frac{7}{5}, -\frac{2}{5}$ e) $\frac{2}{3}, -\frac{1}{3}, -\frac{10}{15}, -\frac{1}{2}, \frac{1}{4}$ f) $\frac{4}{5}, \frac{-2}{3}, -\frac{3}{4}, \frac{-1}{-3}, \frac{3}{-2}$

PART C

18) State the mixed number represented by the shaded portion in each diagram.

a) 

b) 

c) 

19) Express each improper fraction as a mixed number.

a) $\frac{7}{4}$ b) $\frac{9}{2}$ c) $\frac{20}{13}$ d) $\frac{28}{5}$ e) $-\frac{36}{7}$ f) $\frac{113}{25}$ g) $-\frac{80}{11}$

20) Express each mixed number as an improper fraction.

a) $2\frac{3}{4}$ b) $4\frac{5}{8}$ c) $-1\frac{6}{7}$ d) $-2\frac{1}{3}$ e) $-10\frac{4}{5}$

21) Order each the following from least to greatest.

a) $1\frac{2}{3}, \frac{3}{5}, 1\frac{1}{4}, \frac{3}{4}, 2\frac{1}{2}$ b) $-5\frac{3}{4}, -2\frac{7}{8}, 1\frac{5}{6}, -2, \frac{13}{6}$

22) Place a greater than sign (>), less than sign (<) or equals sign (=) between each value to make a true statement.

a) $-\frac{5}{8} \square -\frac{7}{8}$ b) $-\frac{11}{6} \square -\frac{11}{4}$ c) $-\frac{9}{10} \square \frac{14}{20}$ d) $-\frac{7}{8} \square -\frac{3}{4}$ e) $-\frac{4}{3} \square \frac{-6}{5}$

f) $\frac{7}{8} \square \frac{8}{9}$ g) $-\frac{1}{4} \square \frac{-1}{-4}$ h) $3\frac{10}{12} \square 3\frac{15}{18}$ i) $-4\frac{3}{5} \square -5\frac{1}{4}$ j) $-2\frac{1}{3} \square -2\frac{2}{5}$

ANSWERS

1) a) $\frac{1}{4}$ b) $\frac{1}{10}$ c) $\frac{1}{8}$ d) $\frac{1}{12}$

2) One part of a whole that has been divided into 5 equal parts will be smaller than one part of a whole that has been divided into 4 equal parts. Therefore, $\frac{1}{5}$ is less than $\frac{1}{4}$.

3) a) $\frac{1}{2} > \frac{1}{3}$ b) $\frac{1}{6} < \frac{1}{4}$ c) $\frac{1}{10} < \frac{1}{3}$ d) $\frac{1}{40} > \frac{1}{50}$ e) $\frac{1}{25} < \frac{1}{24}$

4) $\frac{1}{100}, \frac{1}{20}, \frac{1}{11}, \frac{1}{9}, \frac{1}{5}, \frac{1}{4}, \frac{1}{2}$

5) a) The $\frac{1}{2}$ tsp will hold the most and the $\frac{1}{8}$ tsp will hold the least. b) 4 scoops

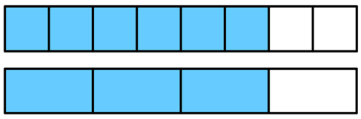
6) a) 40 b) 20 c) 20 d) 24 e) 13 f) 32 **7)** a) 12 b) 8 c) 4

8) a) $\frac{3}{8}$ b) $\frac{7}{12}$ c) $\frac{2}{3}$ d) $\frac{5}{6}$

9) a) $\frac{1}{2}$ inch drywall has the greater thickness.

b) $\frac{1}{8}$ inch difference

10)



11) a) $\frac{3}{6}$ b) $\frac{8}{12}$ c) $\frac{2}{5}$ d) $\frac{2}{3}$

12) a) $\frac{5}{4}$ b) $\frac{5}{3}$ c) $\frac{13}{5}$

13) a) $\frac{1}{3} < \frac{2}{3}$ b) $\frac{3}{4} > \frac{3}{5}$ c) $\frac{5}{2} < \frac{7}{2}$ d) $\frac{5}{4} < \frac{5}{3}$ e) $\frac{1}{4} < \frac{5}{12}$ f) $\frac{2}{5} > \frac{1}{3}$ g) $\frac{1}{7} < \frac{3}{10}$

h) $\frac{2}{3} < \frac{3}{4}$ i) $\frac{6}{5} < \frac{4}{3}$ j) $\frac{10}{3} > \frac{13}{4}$

14) $\frac{-4}{5}, \frac{4}{-5}$ **15)** $\frac{-3}{-2}$ **16)** a) $\frac{2}{3}$ b) $\frac{3}{4}$ c) $\frac{4}{3}$ d) $\frac{3}{10}$ e) $-\frac{1}{2}$ f) $-\frac{1}{3}$ g) $-\frac{3}{2}$

17) a) $\frac{2}{7}, \frac{3}{7}, \frac{4}{7}, \frac{8}{7}, \frac{9}{7}$ b) $\frac{3}{11}, \frac{3}{7}, \frac{3}{5}, \frac{3}{4}, \frac{3}{2}$ c) $\frac{1}{3}, \frac{6}{12}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$

d) $-\frac{7}{5}, -\frac{2}{5}, -\frac{1}{5}, \frac{1}{5}, \frac{2}{5}$ e) $-\frac{10}{15}, -\frac{1}{2}, -\frac{1}{3}, \frac{1}{4}, \frac{2}{3}$ f) $\frac{3}{-2}, -\frac{3}{4}, \frac{-2}{3}, \frac{-1}{-3}, \frac{4}{5}$

18) a) $1\frac{1}{2}$ b) $3\frac{5}{6}$ c) $4\frac{1}{3}$

19) a) $1\frac{3}{4}$ b) $4\frac{1}{2}$ c) $1\frac{7}{13}$ d) $5\frac{3}{5}$ e) $-5\frac{1}{7}$ f) $4\frac{13}{25}$ g) $-7\frac{3}{11}$

20) a) $\frac{11}{4}$ b) $\frac{37}{8}$ c) $-\frac{13}{7}$ d) $-\frac{7}{3}$ e) $-\frac{54}{5}$

21) a) $\frac{3}{5}, \frac{3}{4}, 1\frac{1}{4}, 1\frac{2}{3}, 2\frac{1}{2}$ b) $-5\frac{3}{4}, -2\frac{7}{8}, -2, 1\frac{5}{6}, \frac{13}{6}$

22) a) $-\frac{5}{8} > -\frac{7}{8}$ b) $-\frac{11}{6} > -\frac{11}{4}$ c) $-\frac{9}{10} < \frac{14}{20}$ d) $-\frac{7}{8} < -\frac{3}{4}$ e) $-\frac{4}{3} < \frac{-6}{5}$

f) $\frac{7}{8} < \frac{8}{9}$ g) $-\frac{1}{4} < \frac{-1}{-4}$ h) $3\frac{10}{12} = 3\frac{15}{18}$ i) $-4\frac{3}{5} > -5\frac{1}{4}$ j) $-2\frac{1}{3} > -2\frac{2}{5}$