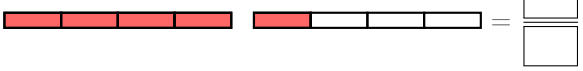
FRACTIONS

A DEFINITIONS

A.1 FINDING FRACTIONS

Ex 1: A bar represents 1. Find the fraction that represents the shaded part:

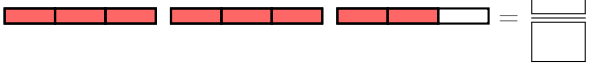


$=$ $\square$/$\square$

Ex 2: A bar represents 1. Find the fraction that represents the shaded part:

$=$ $\square$/$\square$

Ex 3: A bar represents 1. Find the fraction that represents the shaded part:

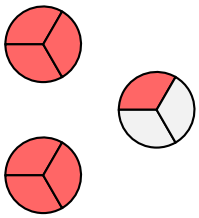


$=$ $\square$/$\square$

Ex 4: A circle represents 1. Find the fraction that represents the shaded part:

$=$ $\square$/$\square$

Ex 5: A circle represents 1. Find the fraction that represents the shaded part:



$=$ $\square$/$\square$

A.2 FINDING FRACTIONS IN WORD PROBLEMS

Ex 6: Hugo eats 3 parts of a cake that is divided into 4 equal parts. What fraction of the cake does Hugo eat?

$\square$/$\square$ of the cake

Ex 7: Liam reads 5 chapters of a book that has 8 chapters. What fraction of the book does Liam read?

$\square$/$\square$ of the book

Ex 8: Vanessa paints 5 squares on a window that has 6 equal squares. What fraction of the window did she paint?

$\square$/$\square$ of the window

Ex 9: Sophia cuts her loaf of bread into 8 equal slices. She uses 2 slices to make sandwiches. What fraction of the bread did Sophia use to make the sandwiches?

$\square$/$\square$ of the bread

A.3 WRITING FRACTIONS FROM WORDS

Ex 10: Write as fraction:

one over four $=$ $\square$/$\square$

Ex 11: Write as fraction:

three over five $=$ $\square$/$\square$

Ex 12: Write as fraction:

three quarters $=$ $\square$/$\square$

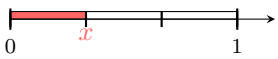
Ex 13: Write as fraction:

six over hundred $=$ $\square$/$\square$

B ON THE NUMBER LINE

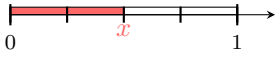
B.1 FINDING FRACTIONS WITH BAR FRACTION MODEL

Ex 14: Find the value of x



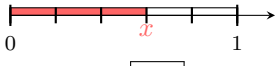
$x =$ $\square$/$\square$

Ex 15: Find the value of x



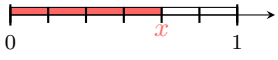
$x =$ $\square$/$\square$

Ex 16: Find the value of x



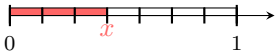
$x =$ $\square$/$\square$

Ex 17: Find the value of x



$x =$ $\square$/$\square$

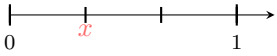
Ex 18: Find the value of x



$x =$ ☐/☐

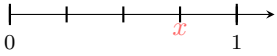
B.2 FINDING FRACTIONS

Ex 19: Find the value of x



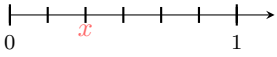
$x =$ ☐/☐

Ex 20: Find the value of x



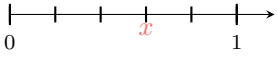
$x =$ ☐/☐

Ex 21: Find the value of x



$x =$ ☐/☐

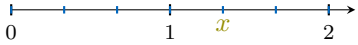
Ex 22: Find the value of x



$x =$ ☐/☐

B.3 FINDING FRACTIONS GREATER THAN 1

Ex 23: Find the value of x

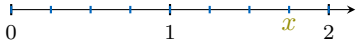


$x =$ ☐/☐

Ex 24: Find the value of x

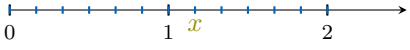
$x =$ ☐/☐

Ex 25: Find the value of x



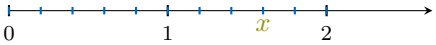
$x =$ ☐/☐

Ex 26: Find the value of x



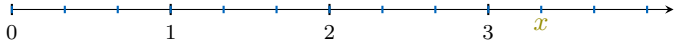
$x =$ ☐/☐

Ex 27: Find the value of x



$x =$ ☐/☐

Ex 28: Find the value of x



$x =$ ☐/☐

C EQUIVALENT FRACTIONS

C.1 FINDING THE MISSING NUMERATOR

Ex 29:

$$\frac{2}{4} = \frac{\square}{2}$$

Ex 30:

$$\frac{9}{6} = \frac{\square}{2}$$

Ex 31:

$$\frac{5}{10} = \frac{\square}{2}$$

Ex 32:

$$\frac{16}{12} = \frac{\square}{3}$$

Ex 33:

$$\frac{4}{10} = \frac{\square}{5}$$

C.2 FINDING THE MISSING DENOMINATOR

Ex 34:

$$\frac{4}{10} = \frac{2}{\square}$$

Ex 35:

$$\frac{6}{12} = \frac{1}{\square}$$

Ex 36:

$$\frac{9}{6} = \frac{3}{\square}$$

Ex 37:

$$\frac{12}{10} = \frac{6}{\square}$$

D SIMPLIFICATION

D.1 SIMPLIFYING FRACTIONS

Ex 38: Simplify:

$$\frac{4}{6} = \frac{\square}{\square}$$

Ex 39: Simplify:

$$\frac{2}{4} = \frac{\square}{\square}$$

Ex 40: Simplify:

$$\frac{10}{8} = \frac{\square}{\square}$$

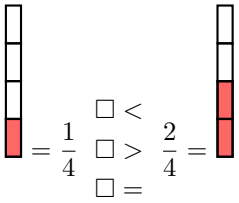
Ex 41: Simplify:

$$\frac{6}{9} = \frac{\square}{\square}$$

E ORDERING FRACTIONS

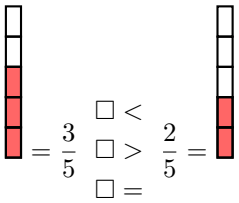
E.1 COMPARING WITH SAME DENOMINATOR WITH BAR MODELS

Ex 42: Compare using $>, <, =$:



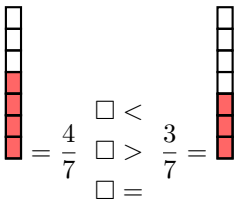
$\frac{1}{4} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{2}{4}$

Ex 43: Compare using $>, <, =$:



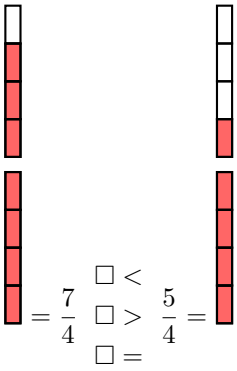
$\frac{3}{5} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{2}{5}$

Ex 44: Compare using $>, <, =$:



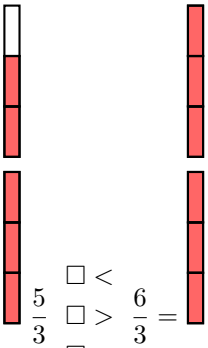
$\frac{4}{7} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{3}{7}$

Ex 45: Compare using $>, <, =$:



$\frac{7}{4} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{5}{4}$

Ex 46: Compare using $>, <, =$:



$\frac{5}{3} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{6}{3}$

E.2 COMPARING WITH SAME DENOMINATOR

Ex 47: Compare using $>, <, =$:

$$\frac{7}{3} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{6}{3}$$

Ex 48: Compare using $>, <, =$:

$$\frac{5}{4} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{3}{4}$$

Ex 49: Compare using $>, <, =$:

$$\frac{2}{6} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{4}{6}$$

Ex 50: Compare using $>, <, =$:

$$\frac{7}{5} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{3}{5}$$

Ex 51: Compare using $>, <, =$:

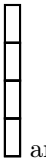
$$\frac{3}{8} \begin{matrix}\square < \\ \square > \\ \square =\end{matrix} \frac{6}{8}$$

E.3 COMPARING FRACTIONS WITH DIFFERENT DENOMINATORS

Ex 52: Compare using $>, <, =$:

$$\frac{3}{4} \begin{array}{l} \square < \\ \square > \\ \square = \end{array} \frac{1}{2}$$

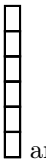
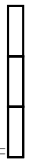
Hint: color the bars below to help you compare the fractions.

$\frac{3}{4} =$  and $\frac{1}{2} =$ 

Ex 53: Compare using $>, <, =$:

$$\frac{5}{6} \begin{array}{l} \square < \\ \square > \\ \square = \end{array} \frac{2}{3}$$

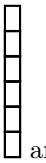
Hint: color the bars below to help you compare the fractions.

$\frac{5}{6} =$  and $\frac{2}{3} =$ 

Ex 54: Compare using $>, <, =$:

$$\frac{5}{6} \begin{array}{l} \square < \\ \square > \\ \square = \end{array} \frac{1}{2}$$

Hint: color the bars below to help you compare the fractions.

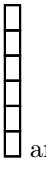
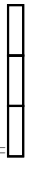
$\frac{5}{6} =$  and $\frac{1}{2} =$ 

Ex 55: Compare using $>, <, =$:

$$\frac{7}{6} \begin{array}{l} \square < \\ \square > \\ \square = \end{array} \frac{4}{3}$$

Hint: color the bars below to help you compare the fractions.

$\frac{7}{6} =$  and $\frac{4}{3} =$ 

Ex 56: Compare using $>, <, =$:

$$\frac{3}{4} \begin{array}{l} \square < \\ \square > \\ \square = \end{array} \frac{7}{8}$$

Hint: color the bars below to help you compare the fractions.

$\frac{3}{4} =$  and $\frac{7}{8} =$ 

E.4 COMPARING FRACTIONS TO REAL-WORLD PROBLEMS

MCQ 57: Hugo spends $\frac{3}{8}$ of his money on Pokemon cards and $\frac{1}{4}$ of his money to buy a tennis racket. On which does he spend more money?

☐ Pokemon cards

☐ Tennis racquet

MCQ 58: Sophie spends $\frac{1}{2}$ of her money on clothes and $\frac{3}{8}$ of her money on books. On which does she spend more money?

☐ Clothes

☐ Books

MCQ 59: For her cake recipe, Sarah uses $\frac{2}{5}$ of a cup of butter and $\frac{3}{10}$ of a cup of sugar. Which ingredient does she use more of?

☐ Butter

☐ Sugar

MCQ 60: In Class A, $\frac{6}{10}$ of the students are girls, and in Class B, $\frac{13}{20}$ of the students are girls. In which class is the proportion of girls higher?

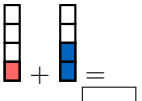
☐ Class A

☐ Class B

F ADDITION AND SUBTRACTION WITH COMMON DENOMINATORS

F.1 ADDING FRACTIONS WITH COMMON DENOMINATORS

Ex 61:



$\frac{1}{4} + \frac{2}{4} = \frac{\square}{\square}$

Ex 62:

$\frac{3}{5} + \frac{1}{5} = \frac{\square}{\square}$

Ex 63:

$$\frac{2}{6} + \frac{3}{6} = \frac{\square}{\square}$$

Ex 64:

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

Ex 65:

$$\frac{4}{5} + \frac{2}{5} = \frac{\square}{\square}$$

F.2 ADDING FRACTIONS WITH COMMON DENOMINATORS

Ex 66:

$$\frac{1}{4} + \frac{2}{4} = \frac{\square}{\square}$$

Ex 67:

$$\frac{3}{5} + \frac{1}{5} = \frac{\square}{\square}$$

Ex 68:

$$\frac{2}{6} + \frac{3}{6} = \frac{\square}{\square}$$

Ex 69:

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

Ex 70:

$$\frac{4}{5} + \frac{2}{5} = \frac{\square}{\square}$$

F.3 SUBTRACTING FRACTIONS WITH COMMON DENOMINATORS

Ex 71:

$$\frac{3}{4} - \frac{2}{4} = \frac{\square}{\square}$$

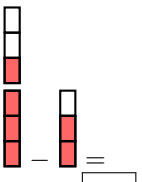
Ex 72:

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

Ex 73:

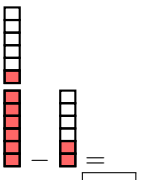
$$\frac{3}{4} - \frac{1}{4} = \frac{\square}{\square}$$

Ex 74:



$$\frac{4}{3} - \frac{2}{3} = \frac{\square}{\square}$$

Ex 75:



$$\frac{7}{6} - \frac{2}{6} = \frac{\square}{\square}$$

F.4 SUBTRACTING FRACTIONS WITH COMMON DENOMINATORS

Ex 76:

$$\frac{3}{4} - \frac{2}{4} = \frac{\square}{\square}$$

Ex 77:

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

Ex 78:

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

Ex 79:

$$\frac{4}{3}-\frac{2}{3}=\frac{\square}{\square}$$

Ex 80:

$$\frac{7}{6}-\frac{2}{6}=\frac{\square}{\square}$$

G ADDITION AND SUBTRACTION WITH DIFFERENT DENOMINATORS

G.1 FINDING A COMMON DENOMINATOR

Ex 81:

$$\frac{1}{2}+\frac{1}{4}=\frac{\square}{4}+\frac{1}{4}$$

Ex 82:

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

Ex 83:

$$\frac{3}{8}+\frac{1}{2}=\frac{3}{8}+\frac{\square}{8}$$

Ex 84:

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

Ex 85:

$$\frac{3}{10}+\frac{6}{5}=\frac{3}{10}+\frac{\square}{10}$$

G.2 ADDING FRACTIONS STEP BY STEP

Ex 86:

$$\frac{1}{2}+\frac{1}{4}=\frac{\square}{4}+\frac{\square}{4}=\frac{\square}{4}$$

Ex 87:

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

Ex 88:

$$\frac{1}{2}+\frac{2}{6}=\frac{\square}{6}+\frac{\square}{6}=\frac{\square}{6}$$

Ex 89:

$$\frac{3}{10}+\frac{2}{5}=\frac{\square}{10}+\frac{\square}{10}=\frac{\square}{10}$$

Ex 90:

$$\frac{3}{8}+\frac{1}{2}=\frac{\square}{8}+\frac{\square}{8}=\frac{\square}{8}$$

G.3 ADDING FRACTIONS

Ex 91:

$$\frac{2}{5}+\frac{3}{10}=\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 92:

$$\frac{3}{4}+\frac{1}{8}=\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 93:

$$\frac{1}{2}+\frac{2}{6}=\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 94:

$$\frac{3}{10}+\frac{2}{5}=\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 95:

$$\frac{3}{8}+\frac{1}{2}=\frac{\square}{\square}+\frac{\square}{\square}=\frac{\square}{\square}$$

G.4 ADDING FRACTIONS

Ex 96:

$$\frac{2}{5}+\frac{3}{10}=\frac{\square}{\square}$$

Ex 97:

$$\frac{1}{4}+\frac{3}{8}=\frac{\square}{\square}$$

Ex 98:

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

Ex 99:

$$\frac{3}{5}+\frac{2}{15}=\frac{\square}{\square}$$

Ex 100:

$$\frac{3}{10}+\frac{2}{5}=\frac{\square}{\square}$$

Ex 101:

$$\frac{3}{8}+\frac{1}{2}=\frac{\square}{\square}$$

G.5 SUBTRACTING FRACTIONS

Ex 102:

$$\frac{2}{5}-\frac{3}{10}=\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 103:

$$\frac{7}{6}-\frac{1}{3}=\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 104:

$$\frac{7}{8}-\frac{3}{4}=\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 105:

$$\frac{5}{3}-\frac{5}{9}=\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square}{\square}$$

Ex 106:

$$\frac{7}{2}-\frac{7}{4}=\frac{\square}{\square}-\frac{\square}{\square}=\frac{\square}{\square}$$

G.6 SOLVING REAL-WORLD PROBLEMS

Ex 107: Louis has a whole cake. He cuts it into 8 equal slices and eats 3 slices. What fraction of the whole cake remains?

$\frac{\square}{\square}$ of the cake

Ex 108: Today, Louis eats $\frac{1}{2}$ of a croissant. Then, Louis eats $\frac{1}{4}$ of another croissant. How much croissant did Louis eat in total?

$\frac{\square}{\square}$ of a croissant

Ex 109: At the beginning, there are $\frac{5}{6}$ of a cake. After eating, there are $\frac{2}{3}$ of the cake. What quantity of cake did Louis eat?

$\frac{\square}{\square}$ of the cake

Ex 110: At the beginning, there are $\frac{7}{8}$ of a pizza. After eating, there are $\frac{3}{4}$ of the pizza. What quantity of pizza did Louis eat?

$\frac{\square}{\square}$ of the pizza

Ex 111: Louis read $\frac{2}{5}$ of his book on Saturday and $\frac{3}{10}$ of his book on Sunday. How much of his book did Louis read in total?

$\frac{\square}{\square}$ of the book