

# Math 8: Fractions Practice Test

# KEY

1. Find 3 equivalent fractions for each of the fractions below

a)  $\frac{3}{5}$     $\frac{6}{10}$     $\frac{9}{15}$     $\frac{12}{20}$     $\frac{15}{25}$     $\frac{18}{30}$

b)  $\frac{12}{21}$     $\frac{4}{7}$     $\frac{24}{42}$     $\frac{36}{63}$

2. Find the **greatest common factor** of the following numbers. Show your work.

a) 6, 10, 28

$$\begin{array}{l} 6 \div 2, 3, 6 \\ 10 \div 2, 5, 10 \\ 28 \div 2, 4, 7, 14, 28 \end{array}$$

GCF = 2

b) 24, 18, 12

$$\begin{array}{l} 24 \div 2, 3, 4, 6, 8, 12, 24 \\ 18 \div 2, 3, 6, 9, 18 \\ 12 \div 2, 3, 4, 6, 12 \end{array}$$

GCF = 6

c) 9, 18, 10, 29

$$\begin{array}{l} 9 \div 3, 9 \\ 18 \div 2, 3, 6, 9, 18 \\ 10 \div 2, 5, 10 \\ 29 \div 29 \end{array}$$

GCF = 1

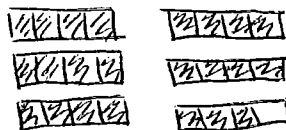
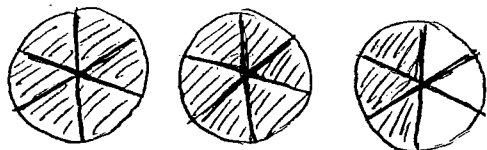
3. When do we use GCFs when working with fractions?

we use the GCF of numbers when we look to reduce or simplify our fractions. Ex:  $\frac{8}{24}$  we look for the GCF (8) so we can divide top and bottom by 8 to get  $\frac{1}{3}$

4. Convert the following improper fractions to mixed numbers. Draw or model each of the fractions.

a)  $\frac{15}{6} = 6 \frac{15}{6} = 2 \frac{3}{6} = 2 \frac{1}{2}$

b)  $\frac{23}{4} = 4 \overline{)23} = 5 \frac{3}{4}$



5. Convert the following mixed numbers to improper fractions.

a)  $3 \frac{1}{8} = 3 \times 8 + 1 = \frac{25}{8}$

b)  $5 \frac{7}{9} = 5 \times 9 + 7 = \frac{52}{9}$

6. Find the **least common multiple** of the following numbers. Show your work.

a) 3, 12, 8

3: 3, 6, 9, 12, 15, 18, 21, (24), 27, 30  
 12: 12, (24), 36, 48, 60  
 8: 8, 16, (24), 32, 40

LCM = 24

b) 3, 9, 21

3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, (63)  
 9: 9, 18, 27, 36, 45, 54, (63), 72  
 21: 21, 42, (63)

7. When do we use LCMs when working with fractions?

We use LCMs when adding + subtracting fractions and we need a common denominator.

Ex:  $\frac{1}{9} + \frac{4}{21}$ ; 63 would be the common denominator.

8. Solve. Write all answers as **proper fractions or mixed numbers in simplest form**. Show your work.

a)  $\frac{4}{6} + \frac{5}{9}$

$\frac{12}{18} + \frac{10}{18} = \frac{22}{18} = 1\frac{4}{18} = 1\frac{2}{9}$

b)  $\frac{22}{12} - 1\frac{1}{4}$

$\frac{22}{12} - \frac{5}{4} = \frac{22}{12} - \frac{15}{12} = \frac{7}{12}$

$\frac{19}{5} + \frac{9}{8} = \frac{152}{40} + \frac{45}{40} = \frac{197}{40}$

$\frac{7}{152} \times \frac{19}{19} = \frac{133}{2888}$   
 $\frac{4}{40} \times \frac{197}{197} = \frac{788}{7880}$

$\frac{49}{20} - \frac{24}{15} \rightarrow \frac{147}{60} - \frac{96}{60} = \frac{51}{60} = \frac{17}{20}$

c)  $3\frac{4}{5} + 1\frac{1}{8} = 4\frac{37}{40}$

d)  $2\frac{9}{20} - 1\frac{9}{15}$

9. Which of the following has the **greater sum**? Solve both and show your work to support your answer.

$\frac{7}{8} + \frac{3}{4}$  OR  $\frac{5}{6} + \frac{3}{5}$   
 $\frac{7}{8} + \frac{6}{8} = \frac{13}{8} = 1\frac{5}{8}$  (larger)  
 $\frac{25}{30} + \frac{18}{30} = \frac{43}{30} = 1\frac{13}{30}$

10. Which of the following has the **greater difference**? Solve both and show your work to support your answer.

$\begin{array}{r} 23 \\ \times 6 \\ \hline 138 \\ - 95 \\ \hline 43 \end{array}$

$4\frac{3}{5} - 3\frac{1}{6}$   
 $\times 6 \left( \frac{23}{5} - \frac{19}{6} \right) \times 5 = \frac{13}{30}$  (larger)

$6\frac{5}{8} - 5\frac{11}{12}$   
 $\times 3 \left( \frac{53}{8} - \frac{71}{12} \right) \times 2 = \frac{17}{24}$

11. Solve. Write all answers as **proper fractions or mixed numbers** in **simplest form**. Show your work.

a)  $\frac{2}{5} \times \frac{1}{3}$

$$\boxed{\frac{2}{15}}$$

b)  $\frac{7}{12} \times 1\frac{3}{21}$

$$\frac{7}{12} \times \frac{24}{21} = \frac{168}{252} \div 3 = \frac{56}{84} \div 2 = \frac{28}{42} \div 2 = \frac{14}{21} \div 7 = \boxed{\frac{2}{3}}$$

OR

$$\frac{7}{12} \times \frac{24}{21} = \boxed{\frac{2}{3}}$$

c)  $2\frac{1}{2} \times 4\frac{1}{6}$

$$\frac{5}{2} \times \frac{25}{6} = \frac{125}{12} = \boxed{10\frac{5}{12}}$$

d)  $4 \times 1\frac{1}{9}$

$$\frac{4}{1} \times \frac{10}{9} = \frac{40}{9} = \boxed{4\frac{4}{9}}$$

e)  $\frac{12}{35} \div \frac{3}{70}$

$$\frac{12}{35} \times \frac{70}{3} = \frac{8}{1} = \boxed{8}$$

OR

$$\frac{12}{35} \times \frac{70}{3} = \frac{840}{105} \div 5 = \frac{168}{21} \div 3 = \frac{56}{7} \div 7 = \boxed{8}$$

f)  $2\frac{7}{8} \div 5\frac{1}{2}$

$$\frac{23}{8} \div \frac{11}{2} = \frac{23}{8} \times \frac{2}{11} = \boxed{\frac{23}{44}}$$

g)  $3 \div \frac{3}{4}$

$$\frac{3}{1} \div \frac{3}{4}$$

$$\frac{3}{1} \times \frac{4}{3} = \frac{12}{3} = \boxed{4}$$

h)  $\frac{6}{11} \div 2$

$$\frac{6}{11} \div \frac{2}{1}$$

$$\frac{6}{11} \times \frac{1}{2} = \boxed{\frac{3}{11}}$$

12. Use order of operations to solve the following. Show your work.

a)  $2 \times (2\frac{3}{4} + 1\frac{5}{6}) - \frac{15}{8} =$

$$2 \times (\frac{11}{4} + \frac{11}{6}) - \frac{15}{8}$$

$$2 \times (\frac{33}{12} + \frac{22}{12}) - \frac{15}{8}$$

$$2 \times (\frac{55}{12}) - \frac{15}{8}$$

$$\frac{2}{1} \times \frac{55}{12} - \frac{15}{8}$$

$$\frac{110}{12} - \frac{15}{8}$$

$$\frac{220}{24} - \frac{45}{24} = \frac{175}{24} = \boxed{7\frac{7}{24}}$$

b)  $(\frac{2}{5})^2 + \frac{7}{15} \div 2\frac{4}{5} + 1$

$$\frac{4}{25} + \frac{7}{15} \div \frac{14}{5} + 1$$

$$\frac{4}{25} + \frac{7}{15} \times \frac{5}{14} + 1$$

$$\frac{4}{25} + \frac{1}{6} + 1$$

$$\frac{24}{150} + \frac{25}{150} + 1$$

$$\frac{49}{150} + 1 = \boxed{1\frac{49}{150}}$$

13. Word Problems:

- a) Jack and Brooklyn are wrapping a present. They need  $\frac{5}{8}$  of a meter of ribbon to go around the present in one direction and another  $\frac{7}{10}$  of a meter to go the other direction. How much ribbon is needed in total?

$$\begin{aligned} & \left( \frac{5}{8} + \frac{7}{10} \right) \times 4 \\ & \frac{25}{40} + \frac{28}{40} = \frac{53}{40} = \boxed{\frac{13}{40}} \text{ of a meter of ribbon is needed.} \end{aligned}$$

- b) Kiera has  $1\frac{1}{4}$  of a cups of trail mix. She gives Ava  $\frac{1}{3}$  of a cup. How much does Kiera have left?

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

$$\begin{aligned} & \left( \frac{5}{4} - \frac{1}{3} \right) \times 4 \\ & \frac{15}{12} - \frac{4}{12} = \boxed{\frac{11}{12}} \end{aligned}$$

Ava has  $\frac{11}{12}$  of a cup of trail mix left.

- c) Four sevenths of the cake was eaten on your birthday. The next day your dad ate half of what was left. You get to finish the cake. How much is left for you?

$$1 - \frac{4}{7} = \frac{7}{7} - \frac{4}{7} = \frac{3}{7}$$

$$\frac{3}{7} \times \frac{1}{2} = \frac{3}{14}$$

There is  $\frac{3}{14}$  of the cake left.

- d) Liam has  $\frac{1}{2}$  a pizza left in his fridge. At breakfast he ate  $\frac{1}{3}$  of the leftover pizza. What fraction of the original pizza does he have left?

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

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

There is  $\frac{1}{3}$  of the pizza left.

- e) Raul bought 6 tangerines and ate  $\frac{2}{3}$  of them. Omar bought 8 tangerines and ate  $\frac{1}{4}$  of them. Who ate more?

$$6 \times \frac{2}{3} = \frac{12}{3} = 4$$

Raul ate more.

$$8 \times \frac{1}{4} = \frac{8}{4} = 2$$

- f) A turtle is  $\frac{5}{6}$  of a km away from a pond. He can walk  $\frac{1}{12}$  of a <sup>km</sup> mile in an hour. How many hours will it take the turtle to get to the pond?

$$\frac{5}{6} \div \frac{1}{12} = \frac{5}{6} \times \frac{12}{1} = \frac{10}{1} = \boxed{10}$$

It will take the turtle 10 hours to reach the pond.