



Fraction Self-Diagnostic - MathHub.Club

Name: _____ Score: _____ / 100

Converting Mixed Numbers and Improper Fractions

Convert each mixed number to an improper fraction:

1. $2\frac{3}{4}$

4. $4\frac{3}{8}$

2. $1\frac{5}{6}$

5. $5\frac{1}{3}$

3. $3\frac{2}{5}$

6. $6\frac{7}{8}$

Convert each improper fraction to a mixed number:

1. $\frac{11}{4}$

4. $\frac{29}{8}$

2. $\frac{17}{5}$

5. $\frac{22}{7}$

3. $\frac{19}{6}$

6. $\frac{35}{11}$

Equivalent Fractions

Determine if the fractions are equivalent. If not, explain why.

1. $\frac{3}{4}$ and $\frac{6}{8}$

4. $\frac{7}{8}$ and $\frac{14}{16}$

2. $\frac{5}{6}$ and $\frac{10}{12}$

5. $\frac{1}{2}$ and $\frac{3}{6}$

3. $\frac{2}{5}$ and $\frac{8}{20}$

6. $\frac{4}{7}$ and $\frac{8}{14}$

Simplify Fractions

Reduce fractions to lowest terms.

1. $\frac{6}{12}$

4. $\frac{8}{16}$

7. $\frac{21}{42}$

2. $\frac{10}{20}$

5. $\frac{9}{27}$

8. $\frac{16}{24}$

3. $\frac{15}{30}$

6. $\frac{14}{28}$

9. $\frac{25}{75}$



Operations on Proper Fractions

Follow the operations. Simplify if needed. Write answers as mixed numbers if possible.

1. $\frac{3}{4} + \frac{1}{5}$
4. $\frac{7}{8} - \frac{3}{10}$
7. $\frac{2}{5} + \frac{3}{7}$
10. $\frac{5}{6} - \frac{1}{3}$
13. $\frac{3}{5} + \frac{2}{9}$
2. $\frac{5}{6} - \frac{2}{7}$
5. $\frac{1}{2} + \frac{1}{3}$
8. $\frac{4}{9} - \frac{1}{6}$
11. $\frac{4}{7} + \frac{3}{8}$
14. $\frac{7}{8} - \frac{5}{12}$
3. $\frac{4}{9} + \frac{2}{3}$
6. $\frac{5}{6} - \frac{1}{4}$
9. $\frac{3}{8} + \frac{2}{5}$
12. $\frac{1}{2} - \frac{1}{4}$
15. $\frac{2}{3} + \frac{1}{4}$

Multiplication and Division Problems with Proper Fractions

Follow the operations. Simplify if needed. Write answers as mixed numbers if possible.

1. $\frac{2}{3} \times \frac{4}{5}$
6. $\frac{7}{8} \times \frac{3}{4}$
11. $\frac{4}{5} \div \frac{3}{4}$
2. $\frac{1}{2} \times \frac{3}{4}$
7. $\frac{2}{3} \div \frac{4}{5}$
12. $\frac{7}{8} \div \frac{3}{4}$
3. $\frac{5}{6} \times \frac{2}{3}$
8. $\frac{1}{2} \div \frac{3}{4}$
13. $\frac{3}{5} \times \frac{2}{7}$
4. $\frac{3}{4} \times \frac{1}{2}$
9. $\frac{5}{6} \div \frac{2}{3}$
14. $\frac{4}{7} \times \frac{3}{5}$
5. $\frac{4}{5} \times \frac{3}{4}$
10. $\frac{3}{4} \div \frac{1}{2}$
15. $\frac{5}{8} \div \frac{4}{7}$



Fraction Over Fraction Problems

Simplify

$$1. \frac{\frac{2}{3}}{\frac{4}{5}}$$

$$3. \frac{\frac{1}{2}}{\frac{2}{3}}$$

$$2. \frac{\frac{5}{6}}{\frac{3}{4}}$$

$$4. \frac{\frac{3}{4}}{\frac{1}{2}}$$

Operations on Mixed Numbers

Follow the operations. Simplify if needed. Write answers as mixed numbers if possible.

$$1. 2\frac{3}{4} + 1\frac{1}{3}$$

$$4. 5\frac{3}{4} \div 1\frac{1}{2}$$

$$7. 1\frac{5}{6} \times 3\frac{2}{3}$$

$$2. 3\frac{2}{5} - 1\frac{3}{4}$$

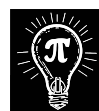
$$5. 2\frac{1}{3} + 1\frac{2}{5}$$

$$8. 2\frac{1}{4} \div 1\frac{1}{2}$$

$$3. 4\frac{1}{2} \times 2\frac{2}{3}$$

$$6. 4\frac{3}{8} - 2\frac{1}{6}$$

$$9. 3\frac{2}{3} + 2\frac{3}{5}$$



Order of Operations

Solve each expression following the order of operations.

1. $\frac{5}{6} + \left(\frac{2}{3} \times \frac{3}{4}\right)$

6. $\frac{2}{3} \times \frac{1}{2} + \frac{3}{5}$

2. $\frac{2}{3} - \frac{1}{4} + \frac{3}{5}$

7. $\frac{3}{4} \times \frac{2}{3} \div \frac{5}{7}$

3. $\frac{4}{5} \times \frac{7}{4} - \frac{2}{3}$

8. $\frac{4}{5} \times \left(\frac{2}{3} + \frac{1}{4}\right)$

4. $\frac{1}{2} + \frac{3}{4} \div \frac{5}{6}$

9. $\left(\frac{1}{3} + \frac{4}{5}\right) \div \frac{3}{4}$

5. $1\frac{3}{4} - \frac{2}{5} \times \frac{1}{2}$

10. $\frac{5}{6} - \frac{1}{4} \times \frac{2}{3}$

Fraction Word Problems

1. A recipe calls for $\frac{3}{4}$ cup of flour to make a batch of cookies. If you want to make three times the batch, how many cups of flour will you need?
2. Sarah drank $\frac{2}{3}$ of a liter of water in the morning and $\frac{1}{4}$ of a liter in the afternoon. How much water did she drink in total?
3. There are $\frac{5}{6}$ of a gallon of milk left in the container. If you pour $\frac{1}{3}$ of it into a glass, how much milk will be left in the container?
4. A car traveled $\frac{3}{5}$ of its total distance in the morning and $\frac{1}{4}$ of its total distance in the afternoon. What fraction of the total distance did the car travel in total?
5. A piece of rope is $\frac{7}{8}$ meters long. If you cut off $\frac{2}{3}$ of the rope, how long is the remaining piece?
6. Amy bought $\frac{3}{4}$ pound of cheese and $\frac{2}{5}$ pound of ham. How much more cheese did she buy than ham?



7. Sarah has a pack of 24 crayons, and divides each crayon into thirds. How many crayons will she end up with?
8. Tom spent $\frac{2}{3}$ of an hour doing homework and $\frac{1}{6}$ of an hour reading a book. How much time did he spend in total?
9. A store sells $\frac{5}{6}$ of a pound of candy for \$2. If each pound contains 16 ounces, how much does 1 ounce of candy cost?
10. A bottle contains $\frac{4}{5}$ of a liter of juice. If you pour $\frac{1}{3}$ of the juice into a glass, how much juice is left in the bottle?

Geometry Problems

Solve the geometry word problems. It will help to draw a picture first. For calculations involving the constant pi (π), please use the approximate value $\frac{22}{7}$ instead.

1. Find the circumference of a circle with radius $\frac{3}{4}$ meters.
2. The diameter of a circle is $\frac{5}{6}$ feet. Find the area of the circle.
3. A rectangle has a length of $\frac{4}{5}$ meters and a width of $\frac{1}{3}$ meters. Find the perimeter of the rectangle.
4. The radius of a circle is $\frac{2}{3}$ yards. Find the area of the circle.
5. Find the circumference of a circle with diameter $\frac{7}{8}$ feet.
6. A cylindrical tank has a diameter of $\frac{1}{6}$ meters and a height of $\frac{3}{4}$ meters. Find the volume of the tank. (Hint: $V = \pi r^2 h$)
7. The circumference of a circle is $\frac{11}{7}$ centimeters. Find the radius of the circle.
8. A triangle has side lengths $\frac{3}{5}$ meters, $\frac{4}{7}$ meters, and $\frac{1}{3}$ meters. Find the perimeter of the triangle.
9. Find the area of a circle with radius $\frac{5}{8}$ meters.
10. Find the area of a triangle with a base of $\frac{1}{2}$ foot and a height of $1\frac{2}{3}$ feet.

