

GRADE 8 MATHS

Fractions, Decimals & Operations

Complete Printable Worksheet Pack

6 Worksheets • Equivalent Fractions • Operations • Decimal Connections • Real-Life Problems • Challenge

Worksheet 1: Fractions & Equivalent Fractions

Name: _____ Date: _____

1. Simplify $\frac{36}{48}$.
2. Find an equivalent fraction for $\frac{5}{8}$ with denominator 40.
3. Are $\frac{18}{24}$ and $\frac{21}{28}$ equivalent? Show why.
4. Convert $2\frac{3}{5}$ to an improper fraction.
5. Convert $\frac{17}{4}$ to a mixed number.
6. Arrange in ascending order: $\frac{3}{4}$, $\frac{5}{8}$, $\frac{7}{10}$.
7. Find the missing numerator: $\frac{x}{36} = \frac{5}{9}$.
8. Find a fraction between $\frac{2}{3}$ and $\frac{3}{4}$.
9. A recipe uses $\frac{3}{4}$ cup of flour per batch. How much flour is needed for 6 batches?
10. Explain why multiplying both numerator and denominator by the same non-zero number gives an equivalent fraction.

Answer Key — Worksheet 1

1. $\frac{3}{4}$.
2. $\frac{25}{40}$.
3. Yes; both simplify to $\frac{3}{4}$.
4. $\frac{13}{5}$.
5. $4\frac{1}{4}$.
6. $\frac{5}{8}$, $\frac{7}{10}$, $\frac{3}{4}$.
7. $x=20$.
8. Example: $\frac{17}{24}$.
9. $4\frac{1}{2}$ cups.
10. The value is unchanged because multiplying numerator and denominator by the same non-zero number is equivalent to multiplying by 1.

Worksheet 2: Adding & Subtracting Fractions

Name: _____ Date: _____

1. Calculate $\frac{3}{8} + \frac{5}{12}$.
2. Calculate $\frac{7}{9} - \frac{5}{12}$.
3. Calculate $2\frac{1}{3} + 1\frac{5}{6}$.
4. Calculate $4\frac{1}{5} - 2\frac{3}{10}$.
5. Calculate $\frac{5}{6} - \frac{7}{15} + \frac{1}{10}$.
6. Find x : $x + \frac{3}{4} = 1\frac{2}{3}$.
7. A tank is $\frac{5}{6}$ full. If $\frac{1}{4}$ of the tank is used, what fraction remains?
8. Mia walked $2\frac{3}{4}$ km in the morning and $1\frac{5}{8}$ km in the evening. How far did she walk altogether?
9. Which is greater: $\frac{7}{8} - \frac{1}{3}$ or $\frac{2}{3} + \frac{1}{12}$? Show your work.
10. Explain why denominators must be made common before adding or subtracting unlike fractions.

Answer Key — Worksheet 2

1. $\frac{19}{24}$.
2. $\frac{13}{36}$.
3. $4\frac{1}{6}$.
4. $1\frac{9}{10}$.
5. $\frac{3}{5}$.
6. $x = \frac{11}{12}$.
7. $\frac{7}{12}$ remains.
8. $4\frac{3}{8}$ km.
9. $\frac{7}{8} - \frac{1}{3} = \frac{13}{24}$; $\frac{2}{3} + \frac{1}{12} = \frac{3}{4} = \frac{18}{24}$, so the second is greater.
10. Equal-sized parts are needed; a common denominator expresses the fractions using the same unit parts.

Worksheet 3: Multiplying & Dividing Fractions

Name: _____ Date: _____

1. Calculate $\frac{4}{7} \times \frac{14}{15}$.
2. Calculate $\frac{5}{6} \div \frac{10}{9}$.
3. Calculate $2\frac{1}{4} \times 3\frac{1}{9}$.
4. Calculate $3\frac{1}{2} \div \frac{7}{8}$.
5. Find $\frac{3}{5}$ of $2\frac{1}{2}$.
6. Find x : $x \times \frac{4}{9} = \frac{8}{27}$.
7. A ribbon is $6\frac{3}{4}$ m long. It is cut into pieces of length $\frac{3}{8}$ m. How many pieces are made?
8. A farmer uses $\frac{2}{3}$ of a field for wheat and $\frac{3}{4}$ of that wheat area is harvested. What fraction of the whole field is harvested?
9. Which is larger: $\frac{5}{8} \div \frac{1}{2}$ or $\frac{5}{8} \times \frac{1}{2}$?
10. Explain why dividing by a fraction is equivalent to multiplying by its reciprocal.

Answer Key — Worksheet 3

1. $\frac{8}{15}$.
2. $\frac{3}{4}$.
3. $7\frac{1}{16}$.
4. 4.
5. $1\frac{1}{2}$.
6. $x=\frac{2}{3}$.
7. 18 pieces.
8. $\frac{1}{2}$ of the whole field.
9. $\frac{5}{8} \div \frac{1}{2} = \frac{5}{4}$, while $\frac{5}{8} \times \frac{1}{2} = \frac{5}{16}$; division result is larger.
10. Dividing by a non-zero fraction reverses its multiplicative effect, so $a \div (b/c) = a \times (c/b)$.

Worksheet 4: Decimals & Fraction Connections

Name: _____ Date: _____

1. Convert 0.375 to a fraction in simplest form.
2. Convert $\frac{7}{20}$ to a decimal.
3. Convert 2.45 to a fraction in simplest form.
4. Calculate $4.75 + 3.086$.
5. Calculate $12.6 - 7.845$.
6. Calculate 3.24×0.6 .
7. Calculate $8.64 \div 0.12$.
8. Which is greater: 0.625 or $\frac{5}{8}$? Explain.
9. A 4.5 kg bag is divided equally into 0.75 kg portions. How many portions are there?
10. Arrange in descending order: 0.72, $\frac{7}{10}$, 0.705, $\frac{71}{100}$.

Answer Key — Worksheet 4

1. $\frac{3}{8}$.
2. 0.35.
3. $\frac{49}{20} = 2 \frac{9}{20}$.
4. 7.836.
5. 4.755.
6. 1.944.
7. 72.
8. They are equal because $\frac{5}{8}=0.625$.
9. 6 portions.
10. 0.72, $\frac{71}{100}$, 0.705, $\frac{7}{10}$.

Worksheet 5: Mixed Fraction & Decimal Applications

Name: _____ Date: _____

1. A 12.5 m rope has $3\frac{3}{4}$ m removed. How much remains?
2. A recipe needs $\frac{2}{3}$ cup of milk per batch. How much is needed for $4\frac{1}{2}$ batches?
3. A shop has 15.6 kg of rice and packs it into 0.75 kg bags. How many full bags can be made?
4. A student completes $\frac{5}{8}$ of a project on Monday and 0.2 on Tuesday. What fraction of the project remains?
5. A tank contains 18.75 L. If $2\frac{1}{2}$ L is removed each hour, how much remains after 5 hours?
6. A runner completes $\frac{3}{5}$ of a 12.5 km course. How far has the runner travelled?
7. A 7.2 m board is cut into pieces of 0.45 m. How many pieces are made?
8. A class has 32 students. $\frac{3}{8}$ choose art and 0.25 choose music. How many students choose neither, assuming no overlap?
9. A price of \$80 is reduced by $\frac{3}{8}$. What is the sale price?
10. Explain how converting fractions to decimals can help compare quantities.

Answer Key — Worksheet 5

1. 8.75 m.
2. 3 cups.
3. 20 full bags.
4. $1 - \frac{5}{8} - \frac{1}{5} = \frac{7}{40}$ remains.
5. 6.25 L.
6. 7.5 km.
7. 16 pieces.
8. Art=12, music=8, neither=12.
9. Reduction=\$30; sale price=\$50.
10. Decimals provide a common place-value format, making comparison straightforward when denominators are different.

Worksheet 6: Fractions, Decimals & Operations Challenge

Name: _____ Date: _____

1. Calculate: $(\frac{3}{4} + 0.25) \div \frac{2}{5}$.
2. Calculate: $2\frac{1}{2} - 0.75 \times \frac{4}{5}$.
3. Find x: $\frac{3}{4}x + 0.5 = 2$.
4. A number is $\frac{2}{3}$ of 4.5. Find the number.
5. A container is $\frac{3}{5}$ full. After adding 2.4 L, it becomes $\frac{9}{10}$ full. Find the container's capacity.
6. A shop sells $2\frac{1}{4}$ kg, 1.75 kg and $\frac{3}{8}$ kg of flour. How much flour is sold altogether?
7. A 24 m cable is cut into pieces of $\frac{5}{8}$ m. How many complete pieces are made and how much cable remains?
8. Which is greater: $\frac{7}{12} + 0.2$ or 0.75? Find the difference.
9. Find a fraction x such that $\frac{1}{2} < x < \frac{3}{5}$ and x has denominator 20.
10. A student says $\frac{2}{3} + \frac{1}{4} = \frac{3}{7}$. Explain the error and give the correct answer.

Answer Key — Worksheet 6

1. $1 \div (2/5) = 5/2$.
2. $2 \frac{1}{2} - \frac{3}{5} = 1 \frac{9}{10}$.
3. $x=2$.
4. 3.
5. Increase is $9/10 - 3/5 = 3/10$. Capacity = $2.4 \div (3/10) = 8$ L.
6. $2 \frac{1}{4} + 1 \frac{3}{4} + \frac{3}{8} = 4 \frac{3}{8}$ kg.
7. $24 \div 5/8 = 38.4$, so 38 complete pieces; remainder = $1/4$ m.
8. $7/12 + 0.2 = 7/12 + 1/5 = 47/60$; $0.75 = 45/60$, so the first is greater by $1/30$.
9. $11/20$ is one valid answer.
10. You cannot add denominators. $2/3 = 8/12$ and $1/4 = 3/12$, so the correct answer is $11/12$.