Pre-Algebra Workbook

Fractions

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FRACTIONS

- 1. What is the numerator of the fraction $1/3$?

- 2. What is the denominator of the fraction $3/5$?

- 3. What is $40\,\%$ as a fraction?

- 4. What is $75\,\%$ as a fraction?

- 5. If a pizza is cut into 6 equal pieces and Ben eats 2 of them, what fraction of the pizza did Ben eat?

- 6. Sharon gets her math test back and got a $70\,\%$. If there were 10 questions, how many questions did she get right?

- 7. Hazel is cleaning out her closet. She has 8 sweaters and 2 of them are blue. What fraction of her sweaters are blue?

8. Joey cuts a pie into 10 equal slices and eats 1 slice. What fraction of the pie did he eat?

REDUCING FRACTIONS AND CANCELLATION

■ 1. Write $20/50$ as a reduced fraction.

■ 2. Write $21/49$ as a reduced fraction.

■ 3. Write $110/154$ as a reduced fraction.

■ 4. Given the fraction of two numbers written as their prime factorizations,

$$\frac{2 \cdot 5 \cdot 7}{2 \cdot 5 \cdot 11}$$

What is the reduced fraction?

■ 5. Given the fraction of two numbers written as their prime factorizations,

$$\frac{2 \cdot 5 \cdot 11}{3 \cdot 5 \cdot 11}$$

What is the reduced fraction?

6. Complete the statement.

When using prime factorization to reduce fractions, you're looking for the numbers in the numerator and denominator that are the _____ prime number.

EQUIVALENT FRACTIONS AND REDUCING

■ 1. Write the fraction $4/5$ in terms of 20ths.

■ 2. Write the fraction $2/3$ in terms of 9ths.

■ 3. Write the fraction $1/7$ in terms of 49ths.

■ 4. Complete the statement.

Equivalent fractions are fractions that are _____ in value.

■ 5. Are the fractions $2/16$ and $4/32$ equal? How do you know?

■ 6. Are the fractions $3/15$ and $6/36$ equal? How do you know?

■ 7. Complete the statement.

Whenever the numerator and denominator of a fraction are equal, the fraction simplifies to _____.

■ 8. Complete the equation.

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

■ 9. Complete the equation.

$$\frac{5}{7} = \frac{?}{35}$$

■ 10. Mia says that $2/5$ is equal to $4/7$ because you add $2 + 2 = 4$ and you add $5 + 2 = 7$. Since you add 2 to both, they are equivalent fractions. Max says that they are not equivalent fractions because you need to multiply to find equivalent fractions, so $2/5$ times 2 would be equal to $4/10$ not $4/7$. Who is correct? Why?

DIVISION OF ZERO

■ 1. Complete the statement.

The fraction $2/7$ means _____ divided by _____.

■ 2. Complete the statement.

The number _____ can never be the denominator of a fraction.

■ 3. Complete the statement.

The fraction $0/8$ has a value of _____.

■ 4. True or false? $5/0$ has a value of 0.

■ 5. True or false? 10 times 0 has a value of 0.

■ 6. Complete the statement.

$8 \div 2 = 4$, $8 \div 4 = 2$, $2 \cdot 4 = 8$ and $4 \cdot$ _____ $= 8$

■ 7. Complete the statement.

$6 \cdot 0 = 0$ and $0 \div 6 =$ _____.

■ 8. Complete the statement of why you cannot divide by 0.

$7 \div 0$ means that that something times 0 has a value equal to 7. But there is nothing times 0 that will ever equal 7 because anything times 0 will always equal _____. Therefore, it's impossible to divide by 0.

ADDING AND SUBTRACTING FRACTIONS

■ 1. Complete the statement.

When you're adding and subtracting fractions, you first have to find common _____.

■ 2. Complete the statement.

When finding a common denominator, you have to find the _____ of the two numbers.

■ 3. Complete the statement.

When you add or subtract fractions, you'll add or subtract the numerators and the _____ will stay the same.

■ 4. Solve.

$$\frac{1}{9}+\frac{3}{9}=$$

■ 5. Solve.

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

6. Solve.

$$\frac{7}{12}-\frac{2}{6}=$$

7. Solve.

$$\frac{4}{11}-\frac{2}{11}=$$

8. Solve.

$$\frac{1}{16}+\frac{3}{4}+\frac{5}{8}=$$

9. Solve.

$$\frac{7}{10}-\frac{1}{10}+\frac{2}{5}=$$

10. Solve.

$$\frac{2}{15}+\frac{1}{5}-\frac{1}{30}$$

MULTIPLYING AND DIVIDING FRACTIONS

■ 1. When you're dividing fractions, you need to flip the _____ fraction.

■ 2. Solve.

$$\frac{3}{5} \cdot \frac{4}{6}$$

■ 3. Solve.

$$\frac{4}{7} \cdot \frac{2}{9}$$

■ 4. Solve.

$$\frac{5}{8} \div \frac{1}{12}$$

■ 5. Solve.

$$\frac{2}{9} \div \frac{1}{15}$$

■ 6. Solve.

$$\frac{1}{10} \cdot \frac{2}{5} \div \frac{1}{4}$$

■ 7. Solve.

$$\frac{3}{5} \div \frac{1}{6} \cdot \frac{4}{9}$$

SIGNS OF FRACTIONS

■ 1. Every fraction has _____ positive or negative signs.

■ 2. Is the statement true or false?

$\frac{-3}{4}$ is equivalent to $-\frac{3}{4}$.

■ 3. Is the statement true or false?

$-\frac{1}{6}$ is equivalent to $\frac{-6}{1}$.

■ 4. Is the statement true or false?

$-\frac{3}{4}$ is equivalent to $\frac{3}{-4}$.

■ 5. Solve.

$$-\frac{2}{7} \cdot \frac{1}{8} =$$

■ 6. Solve.

$$\frac{2}{11} \cdot -\frac{1}{4} =$$

■ 7. Solve.

$$-\frac{3}{20} \cdot -\frac{2}{13} =$$

■ 8. Solve.

$$-\frac{2}{3} \div \frac{3}{10} =$$

■ 9. Solve.

$$\frac{4}{7} \div -\frac{3}{11}$$

■ 10. Solve.

$$-\frac{5}{16} \div -\frac{1}{2}$$

11. If the numerator and the denominator are both negative, the fraction will be _____.

RECIPROCALS

- 1. A reciprocal is when you _____ the fraction.

- 2. What is the reciprocal of $3/4$?

- 3. What is the reciprocal of $-1/2$?

- 4. What is the reciprocal of 3?

- 5. What is the reciprocal of $-1/4$?

- 6. The only number that does not have a reciprocal is _____.

- 7. When you multiply two numbers together which are reciprocals of one another, the result is always _____.

- 8. The reciprocal of a negative fraction is _____.

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