

Name: ANSWER KEY

Block: \_\_\_\_\_

Date: \_\_\_\_\_

## Multiplying FRACTIONS by FRACTIONS

### The Steps

"PSSST"... can you simplify fractions or cross cancel before you continue?!

- 1.) Multiply the numerators.
- 2.) Multiply the denominators.
- 3.) Make sure the answer is in simplest form.

$$\text{Example: } \frac{2}{5} \cdot \frac{3}{8} = \frac{6}{40} = \frac{3}{20}$$

### Let's Try Some!

$$1.) \frac{3}{4} \cdot \frac{7}{8} = \frac{21}{32}$$

$$2.) \frac{3}{9} \cdot \frac{1}{2} =$$

$$\frac{1}{3} \cdot \frac{1}{1} = \frac{1}{3}$$

$$3.) \frac{10}{15} \cdot \frac{2}{3} =$$

$$\frac{2}{3} \cdot \frac{2}{3} = \frac{4}{9}$$

$$4.) \frac{4}{5} \cdot \frac{7}{12} = \frac{7}{15}$$

$$5.) \frac{1}{8} \cdot \frac{10}{12} =$$

$$\frac{1}{1} \cdot \frac{1}{6} = \frac{1}{6}$$

$$6.) \frac{1}{7} \cdot \frac{2}{15} = \frac{2}{35}$$

$$7.) \frac{6}{10} \cdot \frac{40}{60} =$$

$$\frac{1}{5} \cdot \frac{2}{3} = \frac{2}{5}$$

$$8.) \frac{1}{5} \cdot \frac{4}{5} =$$

$$\frac{1}{5} \cdot \frac{4}{5} = \frac{4}{25}$$

## Multiplying FRACTIONS by MIXED NUMBERS

### The Steps

- 1.) Change any mixed numbers to improper fractions  
"PSSST" ...can you simplify fractions or cross cancel before you continue?!
- 2.) Multiply the numerators.
- 3.) Multiply the denominators.
- 4.) Make sure the answer is in simplest form.

$$\text{Example: } 3\frac{1}{5} \cdot 5\frac{2}{3} = \frac{16}{5} \cdot \frac{17}{3} = \frac{252}{15} = 18\frac{2}{15}$$

### Let's Try Some!

$$1.) 5\frac{2}{3} \cdot \frac{10}{11} =$$

$$\frac{17}{3} \cdot \frac{10}{11} = \frac{170}{33} = 5\frac{5}{33}$$

$$2.) 8\frac{2}{5} \cdot 3\frac{5}{7} =$$

$$6 \frac{42}{5} \cdot \frac{26}{7} = \frac{154}{5} = 31\frac{1}{5}$$

$$3.) \frac{1}{2} \cdot 4\frac{1}{8} =$$

$$\frac{1}{2} \cdot \frac{33}{8} = \frac{33}{16} = 2\frac{1}{16}$$

$$4.) 3\frac{4}{5} \cdot 4\frac{2}{3} =$$

$$\frac{19}{5} \cdot \frac{14}{3} = \frac{266}{15} = 17\frac{11}{15}$$

$$5.) 3\frac{1}{2} \cdot \frac{2}{5} =$$

$$\frac{7}{2} \cdot \frac{2}{5} = \frac{7}{5} = 1\frac{2}{5}$$

$$6.) 4\frac{5}{7} \cdot 2\frac{2}{5} =$$

$$\frac{33}{7} \cdot \frac{12}{5} = \frac{396}{35} = 11\frac{11}{35}$$

$$7.) \frac{3}{4} \cdot 5\frac{3}{8} =$$

$$\frac{3}{4} \cdot \frac{43}{8} = \frac{129}{32} = 4\frac{1}{32}$$

$$8.) 4\frac{3}{9} \cdot 5\frac{3}{8} =$$

$$\frac{39}{9} \cdot \frac{43}{8} = \frac{1,677}{72} = 23\frac{21}{72} = 23\frac{7}{24}$$

## Multiplying FRACTIONS by INTEGERS

### The Steps

- 1.) Change any integers into fractions  
"PSSST" ...can you simplify fractions or cross cancel before you continue?!
- 2.) Multiply the numerators.
- 3.) Multiply the denominators.
- 4.) Make sure the answer is in simplest form.

$$\text{Example: } 5 \cdot \frac{1}{8} = \frac{5}{1} \cdot \frac{1}{8} = \frac{5}{8}$$

$$\text{Example: } 8\frac{2}{5} \cdot 3 = \frac{42}{5} \cdot \frac{3}{1} = \frac{126}{5} = 25\frac{1}{5}$$

### Let's Try Some!

$$1.) 4\frac{1}{6} \cdot 9 =$$
$$\frac{25}{2} \cdot \frac{9}{1} = \frac{75}{2} = 37\frac{1}{2}$$

$$2.) 3 \cdot 9\frac{3}{5} =$$
$$\frac{3}{1} \cdot \frac{48}{5} = \frac{144}{5} = 28\frac{4}{5}$$

$$3.) \frac{1}{2} \cdot -4 =$$
$$\frac{1}{2} \cdot \frac{-4}{1} = \frac{-2}{1} = -2$$

$$4.) 3\frac{3}{4} \cdot 9 =$$
$$\frac{15}{4} \cdot \frac{9}{1} = \frac{135}{4} = 33\frac{3}{4}$$

$$5.) 4\frac{5}{6} \cdot 4 =$$
$$\frac{29}{6} \cdot \frac{4}{1} = \frac{58}{3} = 19\frac{1}{3}$$

$$6.) -3 \cdot 3\frac{4}{9} =$$
$$\frac{-3}{1} \cdot \frac{31}{9} = \frac{-31}{3} = -10\frac{1}{3}$$

## Multiplying FRACTIONS, MIXED NUMBERS, and INTEGERS

1.)  $4\frac{1}{6} \cdot 9 \cdot 2\frac{1}{2} =$

$$\frac{25}{\cancel{6}_2} \cdot \overset{3}{\cancel{9}_1} \cdot \frac{5}{2} = \frac{375}{4} = 93\frac{3}{4}$$

2.)  $-2\frac{3}{5} \cdot 9 =$

$$-\frac{13}{5} \cdot \frac{9}{1} = -\frac{117}{5} = -23\frac{2}{5}$$

3.)  $-4 \cdot 2\frac{1}{2} =$

$$\overset{-2}{\cancel{4}_1} \cdot \frac{5}{\cancel{2}_1} = \frac{-10}{1} = -10$$

4.)  $4 \cdot \frac{4}{6} \cdot 3\frac{2}{3} =$

$$\overset{2}{\cancel{4}_1} \cdot \frac{\cancel{4}_3}{\cancel{6}_3} \cdot \frac{11}{3} = \frac{88}{9} = 9\frac{7}{9}$$

5.)  $-4 \cdot 8\frac{2}{5} \cdot -5 =$

$$\frac{-4}{1} \cdot \frac{42}{\cancel{5}_1} \cdot \overset{-1}{\cancel{5}_1} = \frac{168}{1} = 168$$

6.)  $\frac{10}{21} \cdot \frac{3}{5} \cdot 5\frac{2}{9} =$

$$\overset{2}{\cancel{10}_7} \cdot \frac{\cancel{3}_1}{\cancel{5}_1} \cdot \frac{47}{9} = \frac{141}{63} = 2\frac{15}{63} = 2\frac{5}{21}$$