

Name _____

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This example shows a way to multiply two mixed numbers together:

$$2\frac{1}{6} \times 3\frac{3}{4} \Rightarrow \frac{13}{6} \times \frac{15}{4} \Rightarrow \frac{13}{\cancel{2}} \times \frac{\cancel{5}^5}{4} = \frac{65}{8} = 8\frac{1}{8}$$

Original problem. Express both mixed numbers as improper fractions. Cancel when you can. Reduce answer to lowest terms.

Now write the answer after each problem below. Use the empty areas for figuring. You can probably combine some of the steps, or do them mentally.

$1\frac{2}{5} \times 7\frac{1}{2} = \underline{\hspace{2cm}} \qquad 2\frac{1}{3} \times 1\frac{3}{4} = \underline{\hspace{2cm}}$

$7\frac{5}{8} \times 4\frac{4}{5} = \underline{\hspace{2cm}} \qquad 8\frac{1}{10} \times 6\frac{1}{9} = \underline{\hspace{2cm}}$

$2\frac{10}{27} \times 1\frac{23}{40} = \underline{\hspace{2cm}} \qquad 6\frac{13}{18} \times 3\frac{9}{11} = \underline{\hspace{2cm}}$

To **invert** a fraction means to “flip it over,” putting the top number on the bottom and the bottom number on the top. The new fraction that results is the **reciprocal** of the first fraction. For example:

Original fraction:	$\frac{3}{8}$	$\frac{16}{5}$	$\frac{1}{3}$	$6\left(\frac{6}{1}\right)$	$4\frac{1}{5}\left(\frac{21}{5}\right)$
	↑	↑	↑	↑	↑
Reciprocal:	$\frac{8}{3}$	$\frac{5}{16}$	$\left(\frac{3}{1}\right)3$	$\frac{1}{6}$	$\frac{5}{21}$

As the last two examples show, to invert a whole number just remember that a whole number has “1” as its denominator, and to invert a mixed number, express it as an improper fraction first.

Now write the reciprocals of the numbers below in the blanks provided. If a reciprocal is an improper fraction, do not change it into a mixed number.

$\frac{5}{8}$ _____	$\frac{3}{16}$ _____	$\frac{1}{7}$ _____	$\frac{47}{53}$ _____
$\frac{103}{91}$ _____	62 _____	$\frac{18}{11}$ _____	$3\frac{1}{6}$ _____
$99\frac{9}{10}$ _____	$\frac{1}{1000}$ _____	714 _____	$50\frac{1}{2}$ _____

And he will take a tenth of your seed and of your vineyards, and give to his officers and to his servants. 1 Sam. 8:15





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To do division problems involving fractions, you **invert** the number on the right side of the “divide by” (\div) sign, and then you **multiply**, not divide!

Here are some examples. Notice how we “**invert and multiply**.”

$$3/4 \div 7/8 = 3/4 \times 8/7$$

$$12 \div 3/10 = 12 \times 10/3$$

$$2/9 \div 6 = 2/9 \times 1/6$$

$$5 1/8 \div 4/5 = 5 1/8 \times 5/4$$

$$9/16 \div 1 6/7 = 9/16 \times 7/13 \quad \text{Note: } 7/13 \text{ is the reciprocal of } 1 6/7 \text{ or } 13/7.$$

After you’ve inverted the second number and changed the division sign to a “times” sign, do the problem *just like the multiplication problems on previous Levels*. You may need to cancel, change a number into a different form, reduce the answer to lowest terms, and so on, *just like before*.

Now write the answers (in lowest terms) to the problems below in the blanks provided. Use the empty areas for figuring.

$$3/5 \div 7/11 = \underline{\hspace{2cm}}$$

$$12/35 \div 30/49 = \underline{\hspace{2cm}}$$

$$20/27 \div 10 = \underline{\hspace{2cm}}$$

$$18 \div 45/56 = \underline{\hspace{2cm}}$$

$$8/9 \div 3 1/3 = \underline{\hspace{2cm}}$$

$$4 3/8 \div 7/9 = \underline{\hspace{2cm}}$$

$$6 6/11 \div 12 = \underline{\hspace{2cm}}$$

$$105 \div 8 1/3 = \underline{\hspace{2cm}}$$

$$2 3/16 \div 1 11/14 = \underline{\hspace{2cm}}$$

$$6 1/8 \div 8 2/5 = \underline{\hspace{2cm}}$$

... of all that Thou shalt give me I will surely give the tenth unto Thee. Gen. 28:22