Unit B Multiplying and Dividing Fractions
Unit Review Packet

Name ___Key___

Directions: Do ALL (A) Questions. Check Your Answers to (A) Questions. If ALL (A) Questions are
correct, skip (B) Questions and move onto next "I can" statement. If you get any (A)
Questions wrong, MAKE CORRECTIONS and do ALL (B) Questions.

Simplifying Fractions:

A1: $\dfrac{12 \div 4}{32 \div 4} = \left(\dfrac{3}{8}\right)$
A2: $\dfrac{6 \div 6}{48 \div 6} = \left(\dfrac{1}{8}\right)$
A3: $\dfrac{21 \div 3}{27 \div 3} = \left(\dfrac{7}{9}\right)$
A4: $\dfrac{42 \div 42}{84 \div 42} = \left(\dfrac{1}{2}\right)$

B1: $\dfrac{16 \div 4}{20 \div 4} = \left(\dfrac{4}{5}\right)$
B2: $\dfrac{9 \div 9}{36 \div 9} = \left(\dfrac{1}{4}\right)$
B3: $\dfrac{18 \div 6}{30 \div 6} = \left(\dfrac{3}{5}\right)$
B4: $\dfrac{30 \div 15}{75 \div 15} = \left(\dfrac{2}{5}\right)$

Mixed Numbers to Improper Fractions:

A1: $3\dfrac{2}{7} \,^{+2}_{\times 7} = \left(\dfrac{23}{7}\right)$
A2: $1\dfrac{1}{3} \,^{+1}_{\times 3} = \left(\dfrac{4}{3}\right)$
A3: $8\dfrac{4}{9} \,^{+4}_{\times 9} = \left(\dfrac{76}{9}\right)$
A4: $12\dfrac{2}{5} \,^{+2}_{\times 5} = \left(\dfrac{62}{5}\right)$

B1: $2\dfrac{5}{8} \,^{+5}_{\times 8} = \left(\dfrac{21}{8}\right)$
B2: $4\dfrac{5}{6} \,^{+5}_{\times 6} = \left(\dfrac{29}{6}\right)$
B3: $1\dfrac{1}{4} \,^{+1}_{\times 4} = \left(\dfrac{5}{4}\right)$
B4: $15\dfrac{2}{3} \,^{+2}_{\times 3} = \left(\dfrac{47}{3}\right)$

Improper Fractions to Mixed Numbers in Simplest Form:

A1: $\dfrac{12 \div 2}{10 \div 2} = \dfrac{6}{5} = \left(1\dfrac{1}{5}\right)$
A2: $\dfrac{18 \div 2}{8 \div 2} = \dfrac{9}{4} = \left(2\dfrac{1}{4}\right)$
A3: $\dfrac{42 \div 3}{9 \div 3} = \dfrac{14}{3} = \left(4\dfrac{2}{3}\right)$
A4: $\dfrac{28 \div 4}{4 \div 4} = \dfrac{7}{1} = \left(7\right)$

B1: $\dfrac{22 \div 2}{4 \div 2} = \dfrac{11}{2} = \left(5\dfrac{1}{2}\right)$
B2: $\dfrac{50 \div 2}{12 \div 2} = \dfrac{25}{6} = \left(4\dfrac{1}{6}\right)$
B3: $\dfrac{24 \div 3}{9 \div 3} = \dfrac{8}{3} = \left(2\dfrac{2}{3}\right)$
B4: $\dfrac{36 \div 6}{6 \div 6} = \dfrac{6}{1} = \left(6\right)$

"I Can Multiply Fractions and Simplify my Answer into Simplest Terms."

A1: $\dfrac{18}{25} \cdot \dfrac{15}{20} = \boxed{\dfrac{27}{50}}$
(markings: 9 above 18, 3 above 15, 5 below 25, 10 below 20)

B1: $\dfrac{6}{24} \cdot \dfrac{16}{22} = \boxed{\dfrac{2}{11}}$
(markings: 3 above 6, 2 above 16, 8 below 24, 11 below 22)

A2: $\left(1\dfrac{1}{3}\right)^2 =$

$\left(\dfrac{4}{3}\right)^2 = \dfrac{4}{3} \cdot \dfrac{4}{3} = \dfrac{16}{9} = \boxed{1\dfrac{7}{9}}$

B2: $\left(\dfrac{2}{5}\right)^3 =$

$\left(\dfrac{2}{5}\right)^3 = \dfrac{2}{5} \cdot \dfrac{2}{5} \cdot \dfrac{2}{5} = \boxed{\dfrac{8}{125}}$

A3: $4\dfrac{2}{3} \cdot 24 =$

$\dfrac{14}{3} \cdot \dfrac{24}{1} = \dfrac{112}{1} = \boxed{112}$
(markings: 8 above 24, 1 below 3)

B3: $12 \cdot 1\dfrac{3}{8} =$

$\dfrac{12}{1} \cdot \dfrac{11}{8} = \dfrac{33}{2} = \boxed{16\dfrac{1}{2}}$
(markings: 3 above 12, 2 below 8)

A4: $2\dfrac{2}{9} \cdot 4\dfrac{1}{8} =$
(markings: ×9 under the 2, ×8 under the 4)

$\dfrac{20}{9} \cdot \dfrac{33}{8} = \dfrac{55}{6} = \boxed{9\dfrac{1}{6}}$
(markings: 5 above 20, 3 below 9, 11 above 33, 2 below 8)

B4: $5\dfrac{3}{5} \cdot 4\dfrac{2}{7} =$

$\dfrac{28}{5} \cdot \dfrac{30}{7} = \dfrac{24}{1} = \boxed{24}$
(markings: 4 above 28, 1 below 5, 6 above 30, 1 below 7)

"I Can Divide Fractions and Simplify my Answer into Simplest Terms."

A1: $\dfrac{18}{12} \div \dfrac{8}{1} =$

$\dfrac{18}{12} \cdot \dfrac{1}{8} = \boxed{\dfrac{3}{16}}$
(markings: 3 above, 9 then over 18; 4 below 12; 4 below 8)

B1: $\dfrac{9}{1} \div \dfrac{15}{11} =$

$\dfrac{9}{1} \cdot \dfrac{11}{15} = \dfrac{33}{5} = \boxed{6\dfrac{3}{5}}$
(markings: 3 above 9, 5 below 15)

A2: $400 \div 4\frac{{}^{+4}}{{}_{\times 9}} =$

$$\frac{400}{1} \div \frac{40}{9}$$

$$\frac{\overset{10}{\cancel{400}}}{1} \cdot \frac{9}{\cancel{40}_{1}} = \frac{90}{1} = \boxed{90}$$

B2: $5\frac{{}^{+2}}{{}_{\times 3}} \div 6 =$

$$\frac{17}{3} \div \frac{6}{1}$$

$$\frac{17}{3} \cdot \frac{1}{6} = \boxed{\frac{17}{18}}$$

A3: $6\frac{{}^{+1}}{{}_{\times 4}} \div 1\frac{1}{9} =$

$$\frac{25}{4} \div \frac{10}{9}$$

$$\frac{\overset{5}{\cancel{25}}}{4} \cdot \frac{9}{\cancel{10}_{2}} = \frac{45}{8} = \boxed{5\frac{5}{8}}$$

B3: $7\frac{{}^{+1}}{{}_{\times 5}} \div 2\frac{7}{10} =$

$$\frac{36}{5} \div \frac{27}{10}$$

$$\frac{\overset{4}{\cancel{36}}}{\cancel{5}_{1}} \cdot \frac{\cancel{10}^{2}}{\cancel{27}_{3}} = \frac{8}{3} = \boxed{2\frac{2}{3}}$$

"I Can Solve an Equation that involves Fractions by Using Inverse Operations."

A1: $8x = 2\frac{{}^{+2}}{{}_{\times 3}} \quad \div \frac{8}{1}$
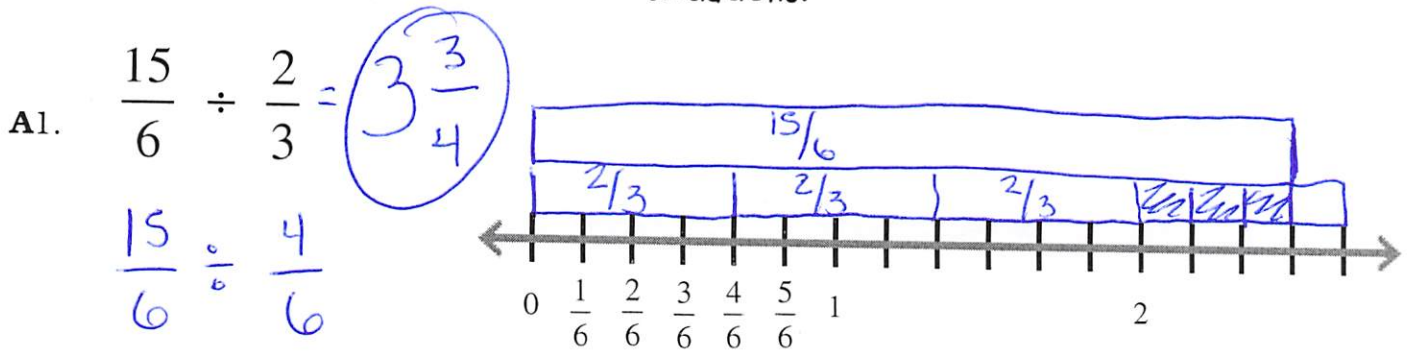
$\div 8$

$$\frac{8}{3} \cdot \frac{1}{8}$$

$$\boxed{x = \frac{1}{3}}$$

B1: $\frac{4}{5}x = \frac{12}{17} \quad \div \frac{4}{5}$

$\div \frac{4}{5}$

$$\frac{\overset{3}{\cancel{12}}}{17} \cdot \frac{5}{\cancel{4}_{1}}$$

$$\boxed{x = \frac{15}{17}}$$

I can model division of fractions visually and use this technique to assist in real-world situations.

A1. $\dfrac{15}{6} \div \dfrac{2}{3} = \boxed{3\dfrac{3}{4}}$

$\dfrac{15}{6} \div \dfrac{4}{6}$

A2. $\dfrac{3}{1} \div \dfrac{2}{5} = \boxed{7\dfrac{1}{2}}$

$\dfrac{15}{5} \div \dfrac{2}{5}$

B1. $\dfrac{3}{4} \div \dfrac{5}{6} = \boxed{\dfrac{9}{10}}$

$\dfrac{9}{12} \div \dfrac{10}{12}$

B2. $1\dfrac{+5}{\times 6} \div \dfrac{1}{2} = \boxed{3\dfrac{2}{3}}$

$\dfrac{11}{6} \div \dfrac{3}{6}$
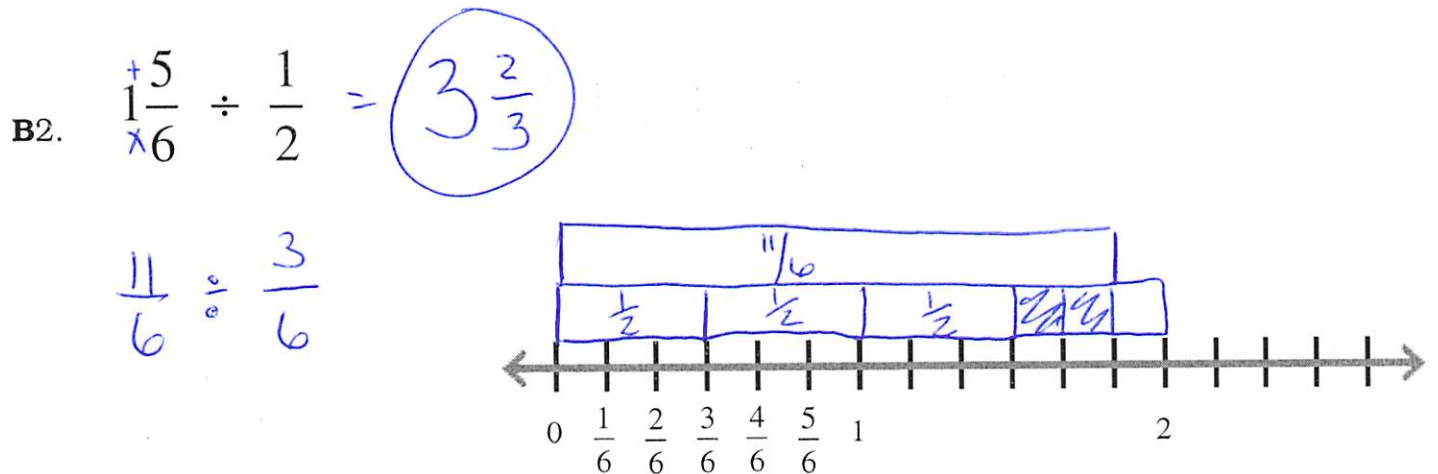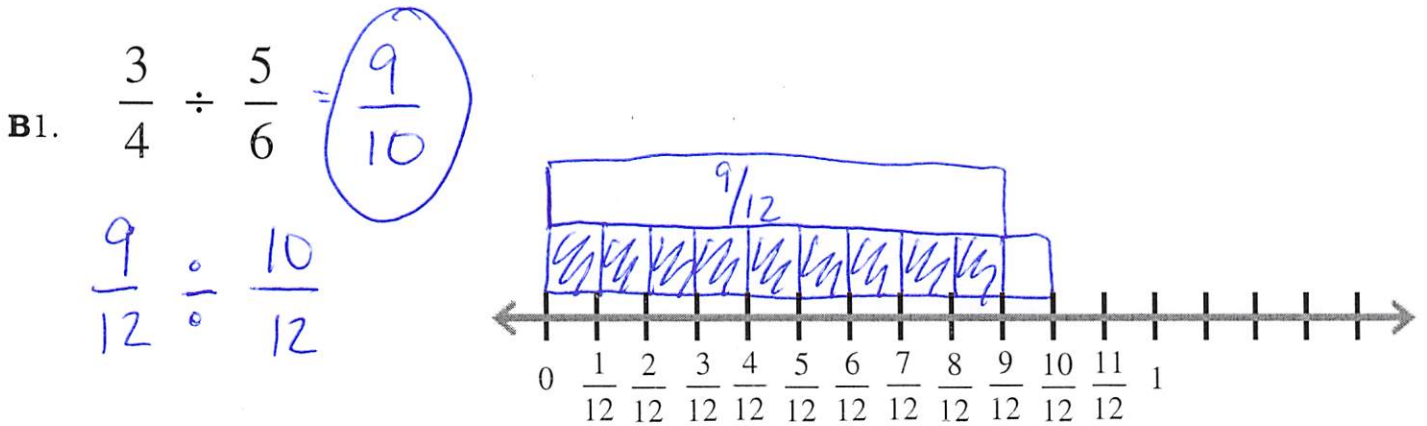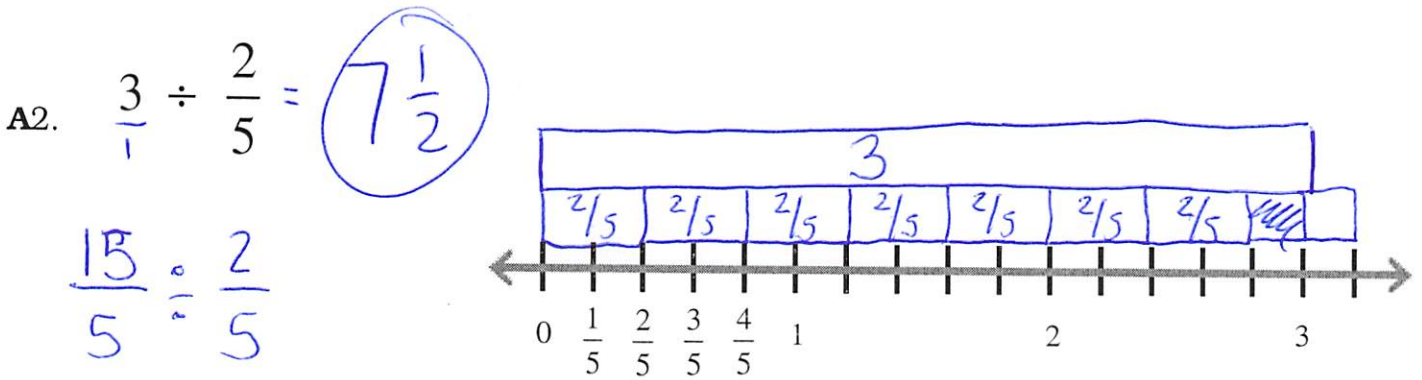
"I Can Interpret a Real-World Situation and decide which Operation to use to Solve Word Problems involving Multiplication and Division of Fractions."

A1: How many $\frac{2}{15}$-meter pieces of wood can you cut from a piece that is $\frac{2}{3}$-meter long?

$$\frac{2}{3} \div \frac{2}{15}$$

$$\frac{\cancel{2}}{\cancel{3}} \cdot \frac{\cancel{15}^{5}}{\cancel{2}_{1}} = \frac{5}{1} = \boxed{5 \text{ pieces of wood}}$$

A2: You have 5 cups of birdseed. You use $\frac{3}{5}$ cup of birdseed each day. How many days will your birdseed last?

Splitting 5 into groups of $\frac{3}{5}$

$$5 \div \frac{3}{5}$$

$$\frac{5}{1} \cdot \frac{5}{3} = \frac{25}{3} = \boxed{8\frac{1}{3} \text{ days}}$$

A3: A restaurant is making hamburgers. The cooks use $\frac{2}{3}$ pounds of beef for each hamburger. If the cooks have $44\frac{2}{3}$ pounds of beef, how many hamburgers can they make?

total

$$44\frac{2}{3} \div \frac{2}{3}$$

$$\frac{134}{\cancel{3}} \cdot \frac{\cancel{3}^{1}}{2} = \frac{134}{2} = \boxed{67 \text{ hamburgers}}$$

A4: A town recorded $2\frac{3}{4}$ in. of rainfall in 6 weeks, with the same amount falling each week. How much rain fell each week?

total

$$2\frac{3}{4} \div 6 \qquad \frac{11}{4} \div \frac{6}{1}$$

$$\frac{11}{4} \cdot \frac{1}{6} = \boxed{\frac{11}{24} \text{ in. each week}}$$

A5: A box of snack size cracker packs weighs $28\frac{1}{2}$ (total) ounces. Each snack pack weighs $4\frac{3}{4}$ ounces. How many snack packs are in the box?

$28\frac{+1}{\times 2} \div 4\frac{+3}{\times 4}$

$\frac{57}{2} \div \frac{19}{4}$

$\frac{\overset{3}{\cancel{57}}}{\underset{1}{\cancel{2}}} \cdot \frac{\overset{2}{\cancel{4}}}{\cancel{19}_1} = \frac{6}{1} = \boxed{6 \text{ snack packs}}$

A6: How many $\frac{3}{8}$ pound bag of trail mix can be made from $6\frac{3}{8}$ pounds of trail mix?

$6\frac{+3}{\times 8} \div \frac{3}{8}$

$\frac{\overset{17}{\cancel{51}}}{\cancel{8}_1} \cdot \frac{\cancel{8}^1}{\cancel{3}_1} = \boxed{17 \text{ bags of trail mix}}$

A7: The area of a rectangular park is $\frac{3}{5}$ square mile. The length of the park is $\frac{7}{8}$ mile. What is the width of the park?

$A = L \cdot W$

$\frac{3}{5} = \frac{7}{8} \cdot W$

$\frac{\div \frac{7}{8}}{\div \frac{7}{8}}$

$\frac{3}{5} \div \frac{7}{8}$

$\frac{3}{5} \cdot \frac{8}{7} = \frac{24}{35}$

$\boxed{\text{Width} = \frac{24}{35} \text{ mile}}$

A8: Bethany needs to earn money by walking a certain number of miles. She will walk for 7 days and needs to walk a total of $8\frac{2}{5}$ miles. If she walks the same amount of miles each day, how many miles will she need to walk each day?

$8\frac{+2}{\times 5} \div 7$

$\frac{42}{5} \div \frac{7}{1}$

$\frac{\overset{6}{\cancel{42}}}{5} \cdot \frac{1}{\cancel{7}_1} = \frac{6}{5} = \boxed{1\frac{1}{5} \text{ miles each day}}$

A9: A set of dictionaries need to be placed on a shelf. Each dictionary is $1\frac{7}{8}$ inches thick and the shelf is $18\frac{3}{4}$ inches long. How many dictionaries will fit on the shelf?

$18\overset{+3}{\underset{\times 4}{\frac{3}{4}}} \div 1\frac{7}{8}$ total

$\frac{75}{4} \div \frac{15}{8}$

$\overset{5}{\underset{1}{\frac{\cancel{75}}{\cancel{4}}}} \cdot \overset{2}{\underset{1}{\frac{\cancel{8}}{\cancel{15}}}} = \frac{10}{1} = \boxed{10 \text{ dictionaries}}$

A10: Carmen has $\frac{5}{6}$ of an hour to write an essay. If it takes her $\frac{1}{4}$ of an hour to write each paragraph, how many paragraphs will Carmen's essay have?

How many $\frac{1}{4}$'s are in $\frac{5}{6}$?

$\frac{5}{6} \div \frac{1}{4}$

$\underset{3}{\frac{5}{\cancel{6}}} \cdot \frac{\overset{2}{\cancel{4}}}{1} = \frac{10}{3} = \boxed{3\frac{1}{3} \text{ paragraphs}}$

A11: Susan has $8\frac{4}{7}$ pounds of dog food. Each day, her dog eats $\frac{1}{7}$ pound of dog food. How many days will the dog food last?

$8\overset{+4}{\underset{\times 7}{\frac{4}{7}}} \div \frac{1}{7}$

$\frac{60}{\cancel{7}} \cdot \frac{\cancel{7}}{1} = \frac{60}{1} = \boxed{60 \text{ days}}$

A12: On a string of Christmas lights, there is a light every $2\frac{1}{2}$ inches. If the string of Christmas lights is 100 inches long, how many lights are on the string?

$100 \div 2\frac{1}{2}$ total

$\frac{100}{1} \div \frac{5}{2}$

$\overset{20}{\frac{\cancel{100}}{1}} \cdot \underset{1}{\frac{2}{\cancel{5}}} = \frac{40}{1} = \boxed{40 \text{ lights}}$