6.NS.A

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

1. The equation shows an unknown number.

□ $÷$ $\frac{2}{3}= \frac{1}{2}$

Write a fraction that makes the equation true.
2. The length of the rectangle is 3 $\frac{1}{5}$ units.



*a.* Use the rectangle to model 3 $\frac{1}{5}$ divided by $\frac{4}{5}$.

*b.* Use the model to determine the value of the expression 3 $\frac{1}{5}$ $÷\frac{4}{5}$.

1. Which statement describes the quotient of $\frac{2}{7} ÷\frac{5}{2}$ and provides correct reasoning?

A. The quotient is less than $\frac{2}{7}$ because division always results in a number less than the dividend.

B. The quotient is less than $\frac{2}{7}$ because the divisor is a fraction greater than 1.

C. The quotient is greater than $\frac{2}{7}$ because dividing by a fraction always results in a number greater than the dividend.

D. The quotient is greater than $\frac{2}{7}$ because the divisor is a fraction greater than 1.

6.NS.A

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

1. Mr. Howard is making a homemade bubble mixture. The mixture requires the following ingredients:
* $\frac{1}{2}$ cup of dishwashing soap
* 4 $\frac{1}{2}$ cup of water
* 4 tablespoons of glycerin

[1 tablespoon = $\frac{1}{16}$ cup]

[1 ounce = $\frac{1}{8}$ cup]

He has an 18-ounce bottle of dishwashing soap and a 4-ounce bottle of glycerin. How many batches of homemade bubbles can Mr. Howard make?

1. The equation shows an unknown number.

 4 $\frac{2}{5}$ $÷$ □ = $\frac{3}{5}$

Write a fraction that makes the equation true.
2. Kenneth is selling lemonade. Each pitcher of lemonade has 1 $\frac{3}{4}$ cups of sugar. Kenneth has one bag of sugar which holds about 11 $\frac{1}{4}$ cups of sugar.

*a.* How many full pitchers of lemonade can Kenneth make from one bag of sugar?

*b.* About how many cups of sugar will be left over after Kenneth has made the number of pitchers of lemonade you determined in Part *a*?

1. Write a story problem that can be solved by dividing 14 $\frac{1}{2}$ by $\frac{3}{4}$.

**Teacher Material**

6.NS.A

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

| **Question** | **Claim** | **Key/Suggested Rubric** |
| --- | --- | --- |
| 1[[1]](#footnote-1) | 1 | **1 point:**$ \frac{2}{6}$, or equivalent |
| 2[[2]](#footnote-2) | 1 | **2 points:** Divides the rectangle into 4 roughly equivalent sections and labels each “$\frac{4}{5}$” AND 4**1 point:** Divides the rectangle into 4 roughly equivalent sections OR 4 |
| 32 | 3 | **1 point:** Selects B |
| 42 | 4 | **1 point**: 2 batches |
| 51 | 1 | **1 point:**$ \frac{22}{3}$, or equivalent |
| 6[[3]](#footnote-3) | 2 | **2 points:** 6 pitchers AND $\frac{3}{4}$ cups, or equivalent**1 point:** 6 pitchers OR $\frac{3}{4}$ cups, or equivalent |
| 7[[4]](#footnote-4) | 4 | **1 point:** Answers will vary. Example: Brian has a rope that is 14$\frac{1}{2}$ feet long. He cuts the rope into $\frac{3}{4}$-foot lengths. How many $\frac{3}{4}$-foot lengths of rope does Brian make? |

1. From Smarterbalanced.org. Grade 6, Claim 1, Target B Item Specifications. Internet. Available from <http://www.smarterbalanced.org/smarter-balanced-assessments/>; accessed 11/2015. [↑](#footnote-ref-1)
2. Adapted from the Mathematics K–12 Learning Standards. Internet. Available from <http://www.k12.wa.us/Mathematics/Standards.aspx>; accessed 11/2015. [↑](#footnote-ref-2)
3. Adapted from Smarterbalanced.org. Grades 6–8, Claim 2 Item Specifications. Internet. Available from <http://www.smarterbalanced.org/smarter-balanced-assessments/>; accessed 11/2015. [↑](#footnote-ref-3)
4. Adapted from Smarterbalanced.org. Grades 6–8, Claim 4 Item Specifications. Internet. Available from <http://www.smarterbalanced.org/smarter-balanced-assessments/>; accessed 11/2015. [↑](#footnote-ref-4)