

Do Now: Simplify

- $\frac{28}{40}$
- $\frac{15}{25}$
- $\frac{a^4}{a^2}$
- $\frac{18m^5}{24m^4}$

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Do Now: Simplify

- $\frac{36}{80} \xrightarrow{\div 4} \frac{9}{20}$
- $\frac{150}{255} \xrightarrow{\div 5} \frac{30}{51} \xrightarrow{\div 3} \frac{10}{17}$
- $\frac{h^6}{h^8} = \frac{1}{h^2}$
- $\frac{12f^{15}}{42f^6} \xrightarrow{\div 6} \frac{2f^{15}}{7f^6} \xrightarrow{\div f^6} \frac{2f^9}{7}$ (Note: $f^0 = 1$)

Oct 8-7:12 AM

5.4 Multiplying Fractions

7.NS.1
7.NS.2
7.EE

- SWBAT multiply fractions and mixed numbers.
- SWBAT understand numbers; understand ways of representing numbers; compute fluently.

• **Calculators: No**

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Multiplying Fractions

Words: The product of two or more fractions is equal to the product of the numerators over the product of the denominators.

Numbers: $\frac{3}{5} * \frac{4}{7} = \frac{3 * 4}{5 * 7} = \frac{12}{35}$

Algebra: $\frac{a}{b} * \frac{c}{d} = \frac{a * c}{b * d}$

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Find the product.

- $\frac{7}{10} * \frac{-4}{21}$

Simplify

$$\frac{7}{10} \cdot \frac{-4}{21} = \frac{7(-4)}{10(21)} = \frac{-28}{210} \xrightarrow{\div 2} \frac{-14}{105} \xrightarrow{\div 7} \frac{-2}{15}$$

$$\frac{1 \cancel{7}^1 \cdot \cancel{4}^{-2} \cdot -2}{\cancel{10}^2 \cdot \cancel{21}^3} = \frac{1}{5} \cdot \frac{-2}{3} = \frac{1(-2)}{5(3)} = \frac{-2}{15}$$

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- $7 \frac{2}{3} * 2 \frac{7}{10}$

$$7 \frac{2}{3} \cdot 2 \frac{7}{10} = \frac{23}{3} \cdot \frac{27}{10} = \frac{23}{1} \cdot \frac{9}{10} = \frac{23(9)}{1(10)} = \frac{207}{10}$$

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3.) $3 + (5/6) * (-3/20)$

$$3 + \frac{5}{6} \left(\frac{-3}{20} \right)$$

PEMDAS

$$\frac{3}{1} + \frac{5}{6} \cdot \frac{-3}{20}$$

$$\frac{3}{1} + \frac{5(-3)}{6 \cdot 20}$$

$$\frac{3}{1} + \frac{-15}{120}$$

$$\frac{3}{1} + \frac{-1}{8}$$

$$\frac{24}{8} + \frac{-1}{8} = \frac{23}{8}$$

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Neg

$$\frac{-123}{-5} \text{ (division) } = \frac{123}{5}$$

Neg

Oct 8-8:25 AM

1.) $-3/5 * 11/12$ $\frac{-3}{5} \cdot \frac{11}{12}$

2.) $-2 \frac{3}{4} * 3 \frac{1}{5}$ $-2 \frac{3}{4} \cdot 3 \frac{1}{5}$

3.) $-3 * (5/8) + (13/24)$ $-3 \left(\frac{5}{8} \right) + \frac{13}{24}$

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A recipe for one loaf of bread requires $3 \frac{1}{4}$ cups of flour. Yahir wants to make 15 loaves. How much flour does he need?

$$3 \frac{1}{4} \cdot 15 = \frac{13}{4} \cdot \frac{15}{1} = \frac{13(15)}{4(1)} = \frac{195}{4}$$

195 cups

$$\frac{195}{4} \cdot \frac{15}{15} = \frac{195 \cdot 15}{4 \cdot 15} = \frac{2925}{60} = \frac{195}{4}$$

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Simplify the expression

a.) $(m/3) * (-12/5)$

$$\frac{m}{3} \cdot \frac{-12}{5} = \frac{m}{1} \cdot \frac{-4}{5} = \frac{-4m}{5}$$

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b.) $(n^2/10) * (5n^3/9)$

$$\frac{n^2}{10} \cdot \frac{5n^3}{9} = \frac{n^2(5n^3)}{10(9)} = \frac{5n^5}{90} = \frac{n^5}{18}$$

$$\frac{n^2}{10} \cdot \frac{5n^3}{9} = \frac{n^2}{2} \cdot \frac{n^3}{9} = \frac{n^2(n^3)}{2(9)} = \frac{n^5}{18}$$

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c.) $(jk/12) * (5jk^7/9)$

$$\frac{1jk}{12} \cdot \frac{5jk^7}{9} = \frac{5j^2k^8}{108}$$

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e.) $(c/7) * (14/15)$

$$\frac{c}{7} \cdot \frac{14}{15} = \frac{c}{1} \cdot \frac{2}{15} = \frac{2c}{15}$$

f.) $(-2x^3/9) * (-3x/4)$

g.) $(r^6/3) * (r^2y^3/11)$

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Exit Pass 5.4

Describe and correct the error in simplifying the expression $(c^2/7) * (4c^4/5)$.

$$(c^2/7) * (4c^4/5) = \frac{c^2 * 4c^4}{7 * 5}$$

Add

$$= \frac{4c^6}{35}$$



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"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the worksheet.



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Reflection of Today's Lesson**5.4 Multiplying Fractions**

7.NS.1
7.NS.2
7.EE

- SWBAT multiply fractions.
- SWBAT identify the numerator and the denominator, understanding the importance of each.

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Homework

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Worksheet 5.4

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5.5 Dividing Fractions

7.NS.1
7.NS.2
7.EE

- SWBAT divide fractions.
- SWBAT identify the numerator and the denominator, understanding the importance of each.

- Calculators: No

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reciprocals- two nonzero numbers whose product is one

| Number | Reciprocal | Reason |
|--------|------------|--------|
| 5 | | |
| $-2/7$ | | |
| 0.1 | | |

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Dividing Fractions

Words: To divide by any nonzero number, multiply by its reciprocal

Numbers: $\frac{2}{9} \div \frac{3}{7} =$

Algebra: $\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} * \frac{d}{c} = \frac{a*d}{b*c}$

where $b \neq 0, c \neq 0$ and $d \neq 0$

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Find the quotient.

1.) $-2/5 \div 4/7$

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2.) $4 \frac{1}{6} \div (-1 \frac{2}{3})$

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3.) $27 \div (-3/11)$

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1.) $-2/3 \div -5/6$

2.) $-6 \frac{2}{3} \div 1 \frac{5}{9}$

3.) $(-16/21) \div -18$

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Kyle mixes 2 gallons (32 cups) of fruit punch for a cookout. If each of the tumblers he plans to serve the punch holds $2 \frac{1}{3}$ cups, how many tumblers can he fill?

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Exit Pass 5.5

Explain why 0.25 and 4 are reciprocals.



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"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the worksheet.



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Reflection of Today's Lesson**5.5 Dividing Fractions**

7.NS.1
7.NS.2
7.EE

- SWBAT divide fractions.
- SWBAT identify the numerator and the denominator, understanding the importance of each.

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Homework

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Worksheet 5.5

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