Lesson 5.4

Multiplying Fractions

Goal: to multiply fractions and mixed numbers

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Multiplying Fractions:

$$\frac{2}{3} \cdot \frac{4}{5} = \frac{8}{15}$$

How do we multiply fractions?

top times top

bottom times bottom

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Multiply:

$$\frac{7}{10} \cdot \left(\frac{-4}{21}\right) = \frac{-28}{210}$$

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

Now try with cross reducing:

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

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Find the product:

$$\frac{\cancel{-3}}{5} \cdot \frac{11}{\cancel{12}4} = \frac{-11}{20}$$

$$\frac{\cancel{-5}}{\cancel{12}4}\left(\frac{\cancel{2}1}{\cancel{10}2}\right) = -\frac{1}{8}$$

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Find the product:

$$\left(\frac{7}{8}\right)^2 = \frac{7}{8} \cdot \frac{7}{8} = \frac{49}{64}$$

$$\frac{3}{\cancel{4}}\left(\frac{-\cancel{12}}{1}\right) = \frac{-9}{1} = -9$$

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To multiply mixed numbers, you will turn them into improper fractions first, and then put your final answer back into a mixed fraction if needed.

$$-3\frac{3}{5} \cdot \left(-1\frac{5}{9}\right)$$

$$-\frac{\cancel{18}}{5} \cdot -\frac{14}{\cancel{9}1} = \frac{28}{5}$$

$$5\overline{)28} \quad 5\frac{3}{5}$$

$$\underline{25}$$

$$3$$

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Multiply:

$4\frac{7}{8} \cdot 5\frac{2}{3}$

$\frac{39}{8} \cdot \frac{17}{3} = \frac{221}{8}$ $27\frac{5}{8}$

$4\frac{1}{8} \cdot \left(-1\frac{2}{3}\right)$

$\frac{33}{8} \cdot -\frac{5}{3} = \frac{055}{8}$ $-6\frac{7}{8}$

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Simplify:

$\frac{3y}{4} \cdot \frac{y^5}{9} = \frac{y^6}{12}$

$\frac{-4x^2}{21} \cdot \frac{7x^3}{16} = \frac{-1x^5}{12}$

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Hwk:

pg 243-244 #7, 8 - 20 (4th),

22 - 36 evens, 42, 47

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