Multiplying Fractions (5-4)

Multiplying Fractions	
Step 1	Multiply the numerators.
Step 2	Multiply the denominators.
Step 3	Simplify, ~~if~~ possible.

Example 1: Multiply the whole numbers by the fraction.

I Do	You Do
$\frac{12}{17} \cdot \frac{-5}{18}$ 2 3 = $\frac{-10}{51}$ 2 17 3 51	$-\frac{9}{16} \cdot -\frac{12}{21}$ -3 -9 4 16 · -12 -3 21 7 = $\frac{9}{28}$

Example 2: You are filling your pool for the summer. You garden hose uses $4\frac{3}{4}$ gallons of water a minute.

I Do	You Do
If you are filling your pool for 30 minutes, how much water is in it?	If you are filling your pool for 3 hours, how much water is in it?
$4\frac{3}{4} \cdot 30$ $\frac{19}{4} \cdot \frac{30}{1} = \frac{285}{2}$ $= 142\frac{1}{2}$ gallons	180 minutes $\frac{19}{4} \cdot \frac{180}{1} = 855$ gallons.

Example 3: Multiply the mixed numbers. * change to improper 1st

I Do	You Do
$-11\frac{2}{5} \cdot 7\frac{3}{4}$ $\frac{-57}{5} \cdot \frac{31}{4} =$ $\frac{-1767}{20} = -88\frac{7}{20}$	$-10\frac{1}{2} \cdot 5\frac{3}{10}$ $\frac{-21}{2} \cdot \frac{53}{10}$ $\frac{-1,113}{20} = -55\frac{13}{20}$

$x^4 \cdot x^2 = x^{4+2} = x^6$

Example 4: Simplify each expression.

I Do	You Do
$-\frac{2}{5} \cdot \frac{3y}{4}$	$\frac{x^4}{2} \cdot \frac{3x^2}{10}$
$-1\,\frac{\cancel{2}}{5} \cdot \frac{3y}{\cancel{4}\,2} = \frac{-3y}{10}$	$= \frac{3x^6}{20}$