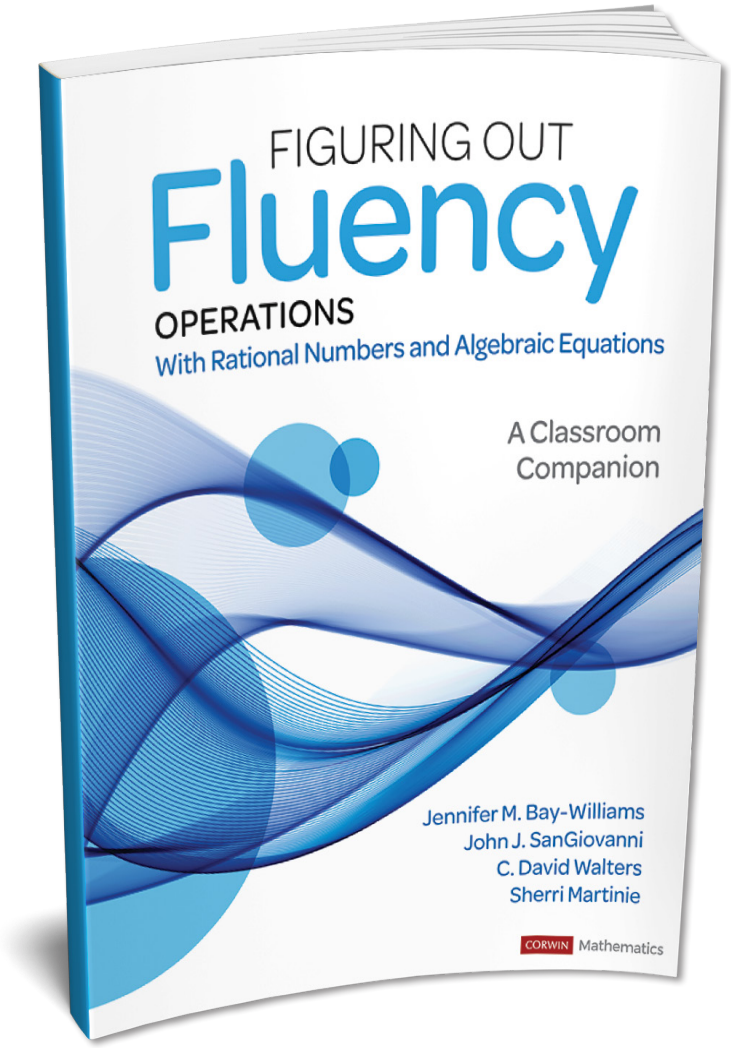

Thank you

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ACTIVITY 5.7
WORKED EXAMPLES FOR RATIOS AND PROPORTIONS

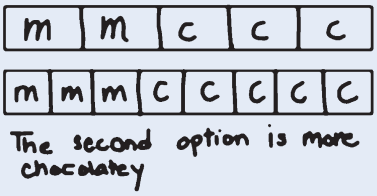
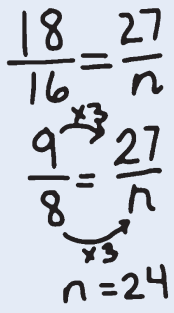
As described in Part 1, correctly worked examples and partially solved worked examples help students make sense of a strategy, while incorrectly worked examples help students notice and avoid common errors. Common errors and challenges include:

- Using additive reasoning when the situation requires multiplicative reasoning. For example, when comparing $6 for 10 pens or $8 for 12 pens, thinking the ratios are the same because of the common difference (Canada et al., 2008; Dougherty et al., 2016).
- Understanding the whole in a part-to-part ratio. For example, if the ratio is 4 parts sugar to 1 part water, understanding that the whole is 5 parts (I, Martinez, & Dougherty, 2018).
- Not attending to covariation. For example, in looking at a ratio table, students may only look at the pattern from one column (or row) to the next without thinking about how two quantities vary together (Carlson, Jacobs, Coe, Larsen, & Hsu, 2002; Dougherty et al., 2016).

Questions to support student thinking for each type include:

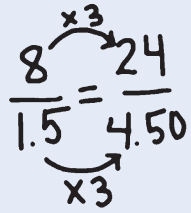
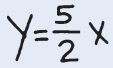
CORRECTLY WORKED EXAMPLES	PARTIALLY WORKED EXAMPLES	INCORRECTLY WORKED EXAMPLES
What did _____ do? Why does it work? Is this a good method for this problem?	Why did _____ start the problem this way? What does _____ need to do to finish the problem?	What did _____ do? What mistake does _____ make? How can this mistake be fixed?

Worked examples are found throughout this module. A sampling of additional ideas is provided in the following table.

WORKED EXAMPLES		
TYPE OF EXAMPLE	**COMPARING RATIOS EXAMPLES**	**MISSING VALUE PROPORTIONS EXAMPLES**
Correctly Worked Example	Analesia is comparing these two recipes to see which option is more chocolatey: 2 cups milk 3 cups milk 3 tablespoons chocolate 5 tablespoons chocolate  The second option is more chocolatey	$\frac{18}{16} = \frac{27}{n}$ Ben solution: 

(*Continued*)

(*Continued*)

WORKED EXAMPLES		
TYPE OF EXAMPLE	**COMPARING RATIOS EXAMPLES**	**MISSING VALUE PROPORTIONS EXAMPLES**
Partially Worked Example	Jaena is working to figure out which is the better deal, 8 markers for $1.50 or 12 markers for $2.00:  	*Problem:* Kiwi are on sale, 5 for $2.00. What is the cost to buy 12 kiwi? Sam sets up an equation: 
Incorrectly Worked Example	Patrick was comparing these prices, $6 for 10 pens or $8 for 12: Both prices are the same. For both you get 4 more pens than the cost.	*Problem:* In a classic cake recipe, the ratio of eggs to flour is 4:3. With $4\frac{1}{2}$ cups of flour, how many eggs are needed?