Cumulative Review

Proportion			Solve	Multiplied numerators by...
1. $\frac{2}{8} = \frac{x}{12}$	Numerators			
	Denominators			
	Common denominator			
2. $\frac{x}{9} = \frac{8}{12}$	Numerators			
	Denominators			
	Common denominator			

3. Jonas can run 12 city street blocks in 3 minutes. How many street blocks can Jonas run in 5 minutes?

Units	Ratio 1	Unit rate	Ratio 2
$\frac{\text{Blocks}}{\text{Minutes}}$	$\frac{\quad}{\quad}$ =	$\frac{\quad}{\quad}$ =	$\frac{\quad}{\quad}$

Cumulative Review (cont.)

4.

Ratios	Common denominator	Ratio 1	Equivalent ratio 1	Ratio 2	Equivalent ratio 2	Are the ratios proportional?
$\frac{7}{4}$ and $\frac{5}{3}$						

Practice

Proportion			Solve	Multiplied numerators by...
$\frac{4 \text{ boys}}{6 \text{ girls}} = \frac{x \text{ boys}}{9 \text{ girls}}$	Numerators	4 and x	$\frac{2}{6} = \frac{x}{15}$ $\frac{2 \cdot 15}{6 \cdot 15} = \frac{x \cdot 6}{15 \cdot 6}$ $\frac{30}{90} = \frac{6x}{90}$ $30 = 6x$ $x = 5$ boys	6 and 9
	Denominators	6 and 9		
	Common denominator	54		
$\frac{2 \text{ pears}}{6 \text{ apples}} = \frac{x \text{ pears}}{15 \text{ apples}}$	Numerators			
	Denominators			
	Common denominator			
$\frac{x \text{ red}}{8 \text{ purple}} = \frac{3 \text{ red}}{12 \text{ purple}}$	Numerators			
	Denominators			
	Common denominator			
$\frac{x}{10} = \frac{5}{25}$	Numerators			
	Denominators			
	Common denominator			

Practice (cont.)

Work with a partner to answer the following questions:

What pattern did you find when completing the graphic organizer?

What does this pattern tell you about using cross products to solve proportions?

Name: _____

Independent Practice

Proportion			Solve	Multiplied numerators by...
$\frac{4}{6} = \frac{x}{9}$	Numerators	4 and x	$\frac{4}{6} = \frac{x}{9}$ $\frac{4 \cdot 9}{6 \cdot 9} = \frac{x \cdot 6}{9 \cdot 6}$ $\frac{36}{54} = \frac{6x}{54}$ $36 = 6x$ $x = 6$	6 and 9
	Denominators	6 and 9		
	Common denominator	54		
$\frac{6}{12} = \frac{x}{20}$	Numerators			
	Denominators			
	Common denominator			
$\frac{6}{10} = \frac{x}{25}$	Numerators			
	Denominators			
	Common denominator			

Answer Key: Cumulative Review

Proportion			Solve	Multiplied numerators by...
1. $\frac{2}{8} = \frac{x}{12}$	Numerators	2 and x	$\frac{2}{8} = \frac{x}{12}$	8 and 12
	Denominators	8 and 12	$\frac{2 \cdot 12}{6 \cdot 12} = \frac{x \cdot 8}{12 \cdot 8}$	
	Common denominator	96	$\frac{24}{96} = \frac{8x}{96}$ $24 = 8x$ $x = 3$	
2. $\frac{x}{9} = \frac{8}{12}$	Numerators	x and 8	$\frac{x}{9} = \frac{8}{12}$	9 and 12
	Denominators	9 and 12	$\frac{x \cdot 12}{9 \cdot 12} = \frac{8 \cdot 9}{12 \cdot 9}$	
	Common denominator	108	$\frac{12x}{108} = \frac{72}{108}$ $12x = 72$ $x = 6$	

3. Jonas can run 12 city street blocks in 3 minutes. How many street blocks can Jonas run in 5 minutes?

Units	Ratio 1	Unit rate	Ratio 2
$\frac{\text{Blocks}}{\text{Minutes}}$	$\frac{12 \div 3}{3 \div 3}$	$= \frac{4}{1}$	$= \frac{\boxed{20}}{5}$

Answer Key: Cumulative Review (cont.)

4.

Ratios	Common denominator	Ratio 1	Equivalent ratio 1	Ratio 2	Equivalent ratio 2	Are the ratios proportional?
$\frac{7}{4}$ and $\frac{5}{3}$	4 x 3 = 12	$\frac{7}{4} = \frac{x}{12}$	$\frac{21}{12}$	$\frac{5}{3} = \frac{x}{12}$	$\frac{20}{12}$	no

Answer Key: Practice

Proportion			Solve	Multiplied numerators by...
$\frac{4 \text{ boys}}{6 \text{ girls}} = \frac{x \text{ boys}}{9 \text{ girls}}$	Numerators	4 and x	$\frac{2}{6} = \frac{x}{15}$	6 and 9
	Denominators	6 and 9	$\frac{2 \cdot 15}{6 \cdot 15} = \frac{x \cdot 6}{15 \cdot 6}$	
	Common denominator	54	$\frac{30}{90} = \frac{6x}{90}$ $30 = 6x$ $x = 5$ boys	
$\frac{2 \text{ pears}}{6 \text{ apples}} = \frac{x \text{ pears}}{15 \text{ apples}}$	Numerators	2 and x	$\frac{2}{6} = \frac{x}{15}$	6 and 15
	Denominators	6 and 15	$\frac{2 \cdot 15}{6 \cdot 15} = \frac{x \cdot 6}{15 \cdot 6}$	
	Common denominator	90	$\frac{30}{90} = \frac{6x}{90}$ $30 = 6x$ $x = 5$ pears	
$\frac{x \text{ red}}{8 \text{ purple}} = \frac{3 \text{ red}}{12 \text{ purple}}$	Numerators	x and 3	$\frac{x}{8} = \frac{3}{12}$	8 and 12
	Denominators	8 and 12	$\frac{x \cdot 12}{8 \cdot 12} = \frac{3 \cdot 8}{12 \cdot 8}$	
	Common denominator	96	$\frac{12x}{96} = \frac{24}{96}$ $12x = 24$ $x = 2$ red beads	
$\frac{x}{10} = \frac{5}{25}$	Numerators	x and 5	$\frac{x}{10} = \frac{5}{25}$	10 and 25
	Denominators	10 and 25	$\frac{x \cdot 25}{10 \cdot 25} = \frac{5 \cdot 10}{25 \cdot 10}$	
	Common denominator	250	$\frac{25x}{250} = \frac{50}{250}$ $25x = 50$ $x = 2$	

Answer Key: Practice (cont.)

Answers will vary.

Work with a partner to answer the following questions:

What pattern did you find when completing the graphic organizer?

What does this pattern tell you about using cross products to solve proportions?

Answer Key: Independent Practice

Proportion			Solve	Multiplied numerators by...
$\frac{4}{6}=\frac{x}{9}$	Numerators	4 and x	$\frac{4}{6}=\frac{x}{9}$	6 and 9
	Denominators	6 and 9	$\frac{4 \cdot 9}{6 \cdot 9}=\frac{x \cdot 6}{9 \cdot 6}$	
	Common denominator	54	$\frac{36}{54}=\frac{6x}{54}$ $36 = 6x$ $x = 6$	
$\frac{6}{12}=\frac{x}{20}$	Numerators	6 and x	$\frac{6}{12}=\frac{x}{20}$	12 and 20
	Denominators	12 and 20	$\frac{6 \cdot 20}{12 \cdot 20}=\frac{x \cdot 12}{20 \cdot 12}$	
	Common denominator	240	$\frac{120}{240}=\frac{12x}{240}$ $120 = 12x$ $x = 10$	
$\frac{6}{10}=\frac{x}{25}$	Numerators	6 and x	$\frac{6}{10}=\frac{x}{25}$	10 and 25
	Denominators	10 and 25	$\frac{6 \cdot 25}{10 \cdot 25}=\frac{x \cdot 10}{25 \cdot 10}$	
	Common denominator	250	$\frac{150}{250}=\frac{10x}{250}$ $150 = 10x$ $x = 15$	