

10.6 Ratios, Rates, and Proportions

Chapter 10: Final Cumulative Review

Name: _____

Date: _____

Class/Period: _____

10.199 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Simplify 42:63.

10.202 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Explain why 3:5 and 5:3 mean different comparisons.

10.200 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Simplify 1.2:0.45.

10.203 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Simplify $\frac{3}{4} : \frac{5}{6}$ to whole-number terms.

10.201 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A bag has 12 red, 18 blue, and 6 green marbles. Simplify red:blue, blue:total, and green:not green.

10.204 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

The measurements 3 feet and 42 inches are written in different units. Convert them to the same unit, then write and simplify the ratio.

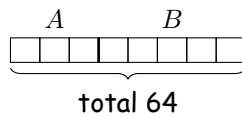
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10.205 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Use the tape diagram to find A and B.



10.206 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Two numbers are in ratio 4:7 and sum 99. Find them.

10.207 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Two numbers are in ratio 9:5 and differ by 36. Find them.

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10.208 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A:B:C=2:5:3 and total is 140. Find all three.

10.210 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Determine whether (2,7),(6,21),(10,35),(14,50) are proportional.

10.209 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Complete a ratio table for $y=3.5x$ at $x=2,5,8,11$.

10.211 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Write three equivalent ratios to 7:11.

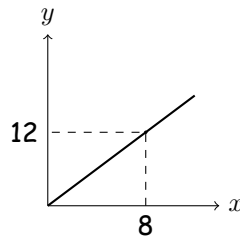
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10.212 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

The graph is proportional. Use the point (8,12) to find k and write $y=kx$.



10.213 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Explain why a proportional graph passes through the origin.

10.214 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Solve $\frac{7}{12} = \frac{x}{30}$. Use an obvious scale factor if it is immediate; otherwise use cross multiplication.

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10.215 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Solve $\frac{4.5}{x} = \frac{6}{11}$. Use an obvious scale factor if it is immediate; otherwise use cross multiplication.

10.218 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Solve $\frac{x}{24} = \frac{5}{6}$. Use an obvious scale factor if it is immediate; otherwise use cross multiplication.

10.216 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Solve $\frac{x-2}{9} = \frac{5}{12}$. Use an obvious scale factor if it is immediate; otherwise use cross multiplication.

10.219 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Solve $\frac{7}{15} = \frac{x}{8}$. Use an obvious scale factor if it is immediate; otherwise use cross multiplication.

10.217 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Solve $\frac{3}{8} = \frac{x}{20}$. Use an obvious scale factor if it is immediate; otherwise use cross multiplication.

10.220 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A student cross multiplies $\frac{3}{8} = \frac{x}{20}$ and writes $3x=160$. Identify the pairing error.

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10.221 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A recipe uses 5 cups flour for 12 loaves. Find flour for 30 loaves.

10.224 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A scale drawing uses 1 inch:3.5 feet. A room is 4.8×3.2 inches. Find actual dimensions and area.

10.222 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A map scale is 1.5 cm:24 km. Find actual distance for 8.25 cm.

10.225 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A car travels 186 miles in 3 hours. Find miles per hour.

10.223 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Similar triangles have side ratio 6:15. A corresponding smaller side is 8. Find the larger side.

10.226 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

An 18-ounce package costs \$4.32. Find cost per ounce.

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10.227 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A cyclist travels 45 miles at 15 mph. Find time.

10.230 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A machine makes 420 parts in 7.5 minutes. Find parts in 18 minutes.

10.228 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A car travels at 72 km/h for 2.5 h. Find the distance.

10.231 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A runner pace is 8.5 minutes per mile for 6.2 miles. Find time in minutes and seconds.

10.229 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Two towns are 210 miles apart; cars approach at 55 and 50 mph. Find meeting time.

10.232 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A model car is scale 1:24 and 7.5 inches long. Find actual length in feet.

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10.233 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Compare 240 miles in 4 hours with 315 miles in 5.25 hours.

10.236 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Convert 3.5 hours to minutes using a conversion chain.

10.234 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

One pipe fills a tank in 6 hours and another in 4. Find combined fraction per hour and total time.

10.237 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Convert 72 km/h to meters per second using dimensional analysis.

10.235 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A worker completes a job in 10 hours. After 4 hours, what fraction remains?

10.238 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Convert 5.4 square meters to square centimeters and explain why the factor is squared.

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10.239 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A label gives 12 mg per 5 mL. Find milligrams in 17.5 mL.

10.240 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A 12-person crew takes 15 days. Estimate time for 20 equal workers and state the inverse-rate assumption.

10.241 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A student says doubling distance and time doubles speed. Correct the ratio reasoning.

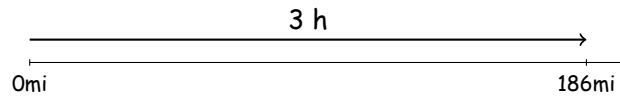
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10.242 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Use the distance-time diagram to find the unit rate.



10.243 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

$A:B=2:7$ and $B:C=3:5$. Find $A:B:C$.

10.244 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A paint mixture is $3:5:2$ red:blue:white. After 4 L white is added, white equals blue. Find original total.

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10.245 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A rectangle is enlarged 5:3. Smaller perimeter is 48 cm. Find larger perimeter.

10.248 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

$A:B:C=2:3:5$. If 8 is added to A and subtracted from C, $A:C$ becomes 1:2. Find original values.

10.246 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A journey distances are 2:3:5 and speeds 5:4:3. Find the ratio of travel times.

10.249 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A runner travels half a distance at 6 mph and half at 10 mph. Find average speed.

10.247 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

Create one proportion where scaling is clearly fastest and one where cross multiplication is fastest. Solve both.

10.250 Directions:

Complete all work on separate paper. Show calculations, reasoning, and labeled diagrams as appropriate..

A photo measuring 8×12 is enlarged to similar perimeter 75. Find dimensions.