

Converting Units with Ratio Reasoning

Grade 6 math · Worksheet · Standards: 6.RP.A.3d

Name: _____ Date: _____ Class: _____

These 20 problems build unit conversion skill with customary and metric measures, from known equivalents to ratio tables, double number lines and multi-step chains.

The last six problems are word problems about shipping, speed and lab work. They train standard 6.RP.A.3d.

Standards: 6.RP.A.3d · **Level:** Grade 6

Problem 1 Knowing Equivalents (easy)

Name the missing number of units. (a) A pint holds ____ cups. (b) A meter has ____ centimeters. (c) A mile is ____ yards. (d) A gallon holds ____ pints.

Problem 2 Metric Conversions (easy)

Convert. (a) 4 km to meters (b) 350 cm to meters (c) 2.5 kg to grams (d) 750 mL to liters

Problem 3 Feet and Inches (easy)

Convert. (a) 7 feet to inches (b) 90 inches to feet

Problem 4 Yards and Feet (easy)

Convert. (a) 12 yards to feet (b) 51 feet to yards

Problem 5 Pounds and Ounces Table (easy)

Copy and complete the ratio table for pounds and ounces.

Pounds	1	3	5	
Ounces	16			160

Three values are missing.

Problem 6 Quarts, Pints and Cups (medium)

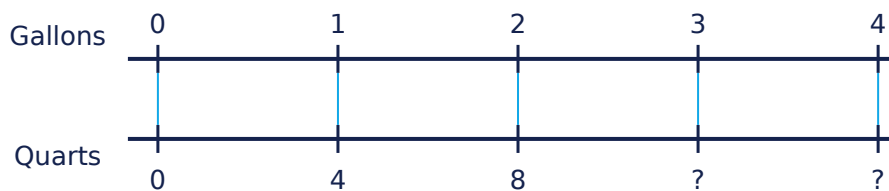
Convert. (a) 6 quarts to pints (b) 20 cups to quarts

Problem 7 Miles to Feet (medium)

A scenic railroad line is 2.5 miles long. How many feet is that?

Problem 8 Double Number Line (medium)

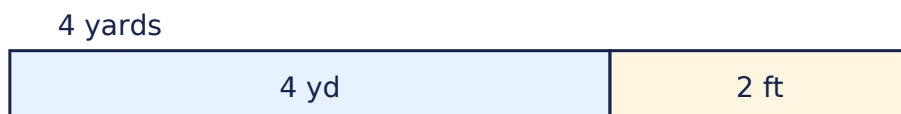
A double number line shows gallons and quarts. Complete it, then find how many quarts are in 6.5 gallons.



Gallons (top) and quarts (bottom).

Problem 9 Mixed Units (medium)

A ribbon is cut in two pieces, one 4 yards long and one 2 feet long. Find the total length in feet and in inches.



A ribbon of 4 yd + 2 ft

Two pieces of ribbon.

Problem 10 Using a Conversion Factor (medium)

Write the conversion factor that changes pounds to ounces as a fraction, then use it to change 2.25 pounds to ounces.

Problem 11 Which Is Longer? (medium)

One board is 2.4 meters long and another is 235 centimeters long. Which is longer, and by how many centimeters?

Problem 12 Which Is Heavier? (medium)

A bag of flour weighs 3 pounds. A bag of sugar weighs 50 ounces. Which bag is heavier, and by how many ounces?

Problem 13 Punch Bowl (medium)

A punch bowl holds 2.5 gallons. How many 1-cup servings does it hold?

Problem 14 Training Laps (hard)

A runner trains 5.4 kilometers. (a) How many meters is that? (b) A lap is 400 meters. How many laps is that?

Problem 15 Ribbon Costumes (hard)

A theater group needs 15 feet of ribbon for each of 14 costumes. Ribbon is sold by the yard for \$2.40 per yard. What is the total cost?

Problem 16 Shipping Limit (hard)

A box holds 36 books, and each book weighs 28 ounces. The shipping limit is 70 pounds. Is the box under the limit, and by how many pounds?

Problem 17 Miles to Inches (hard)

Use the diagram to convert 3 miles to inches. Find both missing values.



Miles to feet to inches.

Problem 18 Gas Can Hours (hard)

A gas can holds 5 gallons. A generator uses 2.5 pints of gas each hour. For how many hours does one full can run the generator?

Problem 19 Ferry Speed (hard)

A ferry travels 1.5 miles in 30 minutes at a constant speed. Find its speed in feet per minute.

Problem 20 Lab Vials (hard)

A lab has 0.35 liter of solution. It fills vials of 25 milliliters each, and each vial costs \$0.85. How many vials are filled, and what do they cost in all?