MSTAR PRACTICE WORKSHEET

Lesson 3-6: Ratio Reasoning: Convert Measurements within the Same System

Grade 6 Mathematics · Standard 6.AT.3

Name: _____ Date: _____

These are MSTAR-style questions written for this curriculum to rehearse the format. They are not official Maryland assessment items. MSTAR — Maryland's new state test, first given in spring 2027 — uses the same kinds of questions you see here: selected response, select-all, two-part evidence questions, and written responses.

Part A — Skills Check

Warm up with the lesson's core skills — one best answer each.

Question 1 SELECTED RESPONSE · 1 POINT

There are 12 inches in 1 foot. How many inches are in 5 feet?

(A) 7 inches

(B) 17 inches

(C) 50 inches

(D) 60 inches

Question 2 SELECTED RESPONSE · 1 POINT

There are 1,000 millliliters in 1 liter. How many milliliters are in 3 liters?

(A) 30 mL

(B) 300 mL

(C) 1,003 mL

(D) 3,000 mL

Question 3 SELECTED RESPONSE · 1 POINT

There are 16 ounces in 1 pound. How many pounds is 48 ounces?

(A) 3 pounds

(B) 32 pounds

(C) 64 pounds

(D) 768 pounds

Question 4 SELECTED RESPONSE · 1 POINT

A child is 4 feet tall. A ride requires 44 inches. Can the child ride?

(A) No, because 4 is less than 44

(B) Yes, because 4 feet = 44 inches exactly

(C) Yes, because 4 feet = 48 inches, which is more than 44

(D) You cannot compare feet and inches

Question 5 SELECTED RESPONSE · 1 POINT

Diamond needs 4 liters of water. Her bottle holds 500 milliliters. How many times must she fill it?

(A) 2 times

(B) 4 times

(C) 8 times

(D) 40 times

Question 6 SELECTED RESPONSE · 1 POINT

How many inches are in 2 feet?

(A) 10

(B) 12

(C) 14

(D) 24

Part B — Test-Format Questions

These match the state test's formats: two-part questions, select-all, and written responses.

Question 7 TWO-PART QUESTION

Part A

A rope measures 7 feet. Using 1 foot = 12 inches, how long is the rope in inches?

Fill in the bubble next to the one best answer.

(A) 0.58 inches

(B) 7 inches

(C) 19 inches

(D) 84 inches

Part B

Answer Part A before Part B — Part B asks about your reasoning.

How do you know the answer to Part A should be a LARGER number than 7?

(A) Converting always makes numbers larger.

(B) Multiplying always makes numbers larger.

(C) An inch is smaller than a foot, so it takes more inches to measure the same length.

(D) Feet and inches are in different systems.

Question 8 WRITTEN RESPONSE · 2 POINTS

Type II Reasoning: Converting the Wrong Direction

> Tariq converted 240 centimeters to meters. Knowing 1 meter = 100 centimeters, he wrote: '240 × 100 = 24,000 meters.'

Explain Tariq's misconception and give the correct conversion.

Write your answer in complete sentences. Show or explain your mathematical thinking.

Part C — Show Your Thinking

Answer in writing, the way the state test's constructed responses work.

Question 9 WRITTEN RESPONSE · 2 POINTS

Michael's mother is setting four fence posts. Each post needs 250 ounces of concrete mix, one bag holds 80 ounces, and each bag needs 1 quart of water. How many bags and how many cups of water does she need? Show your conversions.

Write your answer in complete sentences. Show or explain your mathematical thinking.

When you finish, check your reasoning with your teacher or family. Your teacher has the scoring guide for the written responses.