



The GED Mathematics Test

Measurement



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GED

Video Partner



Passing the GED Math Test

Personal example carries more weight than preaching.
Chinese Proverb

Video 33 Focus: how we use measurement in our daily lives and how to solve math problems using measurement.

You Will Learn From Video 33:

- How to use measurement to solve problems.
- How use linear, area, and volume measurements.
- How to make unit conversions within a measurement system.
- How to select and use appropriate tools for measurement.
- About U.S. Customary and metric systems of measurement.



Words You Need to Know:

While viewing the video, put the letter of the meaning by the correct vocabulary word. Answers are on page 17.

- | | |
|------------------------|---|
| _____ 1. length | a. measurement of filling a space expressed in cubic units |
| _____ 2. weight | b. measurement system used by most of the world but not the United States |
| _____ 3. volume | c. measurement of tiling or covering a space expressed in square units |
| _____ 4. metric system | d. linear measurement |
| _____ 5. area | e. measurement of the mass of an object |

Points to Remember:

- We often use measurement in our daily lives.
- Solving problems on the GED Math Test requires conversions within a system of measurement but not between two systems.
- You will be given benchmark conversions, but you should memorize the basic ones.

Introduction to Measurement

As adults we use measurement a lot in our daily lives. We use linear measurements, liquid measurements, volume measurements, measurements of weight or mass, and measurements of time and temperature.

We use linear measurement when we see how many inches our children grow each year, when we do household projects such as hanging curtains or installing new baseboards, and when we lay sprinkler pipes in the yard. These measurements include inches, centimeters, feet, yards, meters and even miles.



We use liquid measurements when we shop for household items such as dish soap or soft drinks, when we follow a recipe, when we mix concentrates with water to make new products for cleaning or sprays for the indoor and outdoor plants, and when we put gasoline in the car. These measurements include ounces, cups, pints, quarts, liters, and gallons.



We use measurements of volume when we follow a recipe, order sand for a new sandbox, and put powdered soap in the washer. These measurements include cubic inches, cups, cords, and cubic yards.

We use measurements of weight or mass when we weigh mail, coffee, margarine, meat, cheese, trucks, and even ourselves. These measurements include ounces, grams, pounds, and tons.

We use measurements of time when we bake, create a schedule or routine, time swimming or running races, mark our calendar, and set our VCR, DVD recorder, or use Tivo™. These measurements include seconds, minutes, hours, days, months, years, and centuries.



We use measurements of temperature when we check to see if our children have a fever, make homemade candy, check the weather, install a tropical fish aquarium, plan vacation wardrobes, and regulate a hot tub. These measurements include degrees Fahrenheit and degrees Celsius.

There are many other units of measurement which are used by doctors, geographers, scientists, historians, and people doing specialized jobs. These other units come from both our U.S. Standard System of measurement and from the metric system. Examples of other units include fathom, degrees Brix, rods, cubic centimeter (cc), stere, acre, kilometer, bushel, peck, dram, and stone.

It is very important, however, to know and understand the common units of measurement that we use in our daily lives. The GED Math Test will test your knowledge of those units of measurement. Questions may include units from both the U.S. Standard System of measurement and the metric system. **But you will not have to convert measurements from one system to the other.**

Charts of Equivalent Measurements

U. S. Customary (Standard) System

Length	Capacity
12 inches = 1 foot 3 feet = 1 yard 1 mile = 5,280 feet	8 ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon
Weight	Time
16 ounces = 1 pound 2,000 pounds = 1 ton	60 seconds = 1 minute 60 minutes = 1 hour 24 hours = 1 day 7 days = 1 week 52 weeks = 1 year 1 year = 365 days (366 in a leap year)

Metric System*

*The metric system is used by all other countries in the world. It is simple to use and will be explained later in this workbook.

Length	Capacity
10 millimeters = 1 centimeter 100 centimeters = 1 meter 1000 meters = 1 kilometer	1000 cubic centimeters (cc's) = 1 liter
Volume	Mass
1000 cubic centimeters = 1 liter	1000 grams = 1 kilogram

Use the charts above to complete the exercise below. On the GED Math Test you will have to know some of the basic equivalent measurements in both systems.

Answers are on page 17.

2 pounds = _____ ounces

3 weeks = _____ days

1.5 kilometers = _____ meters

8 ounces = _____ pound

2 pints = _____ cups

500 grams = _____ kilogram

3 years = _____ months

16 ounces = _____ cups

1 pint = _____ cups

2 1/2 hours = _____ minutes

_____ weeks = 2 years

3 yards = _____ feet

1/2 mile = _____ feet

_____ seconds = 5 minutes

1 cup = _____ ounces

2 gallons = _____ quarts

.5 liter = _____ cubic centimeters (cc's or cm³)

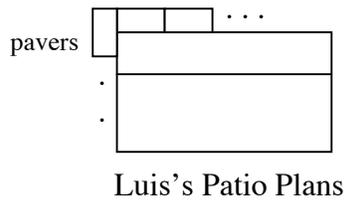


About Math and Life



Luis was planning to make a patio for his backyard. He decided on a rectangular design that would be 18 feet long and 10 feet wide. He planned to make a border of brick pavers that were eight inches long and three inches wide. Then he planned to cover the ground with artificial sod. The sod was sold by the yard like fabric. It was 45 inches wide. When Luis went to buy his materials, how many pavers did he need, and how many yards of artificial sod did he have to buy?

Answers are on page 17.



_____ pavers

_____ yards of sod
(not to scale)

Linear Measurement



Linear measurement is used to measure the length or width of objects, the distance between points, or the distance around things (perimeter). The most common units of linear measurement are inches, feet, yards, and miles. When measuring, we choose the unit that is best for the situation at hand. If we are measuring curtains, we would choose inches. If we were measuring the distance between cities, we would choose miles.

Write inch, foot, yard, or mile after each item listed below to show which unit of linear measurement would be most appropriate.

Answers are on page 17.

length of a piece of paper _____

flight across the country _____

distance between suburbs _____

length of a fish _____

fabric needed to sew a dress _____

length of a whale _____

height of a ceiling _____

depth of a swimming pool _____

perimeter of a baseball field _____

distances on a football field _____

length of a paper clip _____

size of a window _____

Operations with Linear Measurement
Addition and Subtraction



In the U. S. Standard system of measurement, units are used together when something does not measure exactly in one unit. For example, we often speak of a person's height in feet and inches. Mr. Brown is 6 feet, 2 inches tall. When combining or subtracting measurements, we use the different units and then adjust the answer as needed.

$$\begin{array}{r} 3 \text{ feet } 4 \text{ inches} \\ + 2 \text{ feet } 6 \text{ inches} \\ \hline 5 \text{ feet } 10 \text{ inches} \end{array}$$

$$\begin{array}{r} 3 \text{ feet } 10 \text{ inches} \\ + 5 \text{ feet } 9 \text{ inches} \\ \hline 8 \text{ feet } 19 \text{ inches} \end{array}$$



9 feet 7 inches
 12 inches = 1 foot, so add one more foot and you are left with seven (19-12) inches.



Try these operations with measurements. Remember to adjust the answer to combine units if needed.
Answers are on page 17.

$$\begin{array}{r} 3 \text{ yards } 1 \text{ foot} \\ + 2 \text{ yards } 2 \text{ feet} \\ \hline \end{array}$$

$$\begin{array}{r} 4 \text{ miles } 2000 \text{ feet} \\ + 2 \text{ miles } 1500 \text{ feet} \\ \hline \end{array}$$

$$\begin{array}{r} 17 \text{ feet } 6 \text{ inches} \\ - 12 \text{ feet } 4 \text{ inches} \\ \hline \end{array}$$

$$\begin{array}{r} 4 \text{ yards } 2 \text{ feet} \\ + 4 \text{ yards } 2 \text{ feet} \\ \hline \end{array}$$

$$\begin{array}{r} 3 \text{ feet } 11 \text{ inches} \\ - 2 \text{ feet } 10 \text{ inches} \\ \hline \end{array}$$

$$\begin{array}{r} 3 \text{ feet } 11 \text{ inches} \\ + 9 \text{ feet } 6 \text{ inches} \\ \hline \end{array}$$

Borrowing in Subtracting Measurements



It is sometimes necessary to borrow from one of the units in order to subtract measurements.

$$\begin{array}{r} 3 \text{ yards } 1 \text{ foot} \\ - 2 \text{ yards } 2 \text{ feet} \\ \hline \end{array}$$

Since you cannot subtract 2 from 1, it is necessary to borrow a yard.

$$\begin{array}{r} 2 \quad 4 \text{ feet} \\ 3 \text{ yards } 4 \text{ feet} \\ - 2 \text{ yards } 2 \text{ feet} \\ \hline 2 \text{ feet} \end{array}$$

One yard = 3 feet. Add 3 to the foot that is already there.

Try these problems:

Answers are on page 17.

$$\begin{array}{r} 4 \text{ yards } 2 \text{ feet } 6 \text{ inches} \\ - 2 \text{ yards } 2 \text{ feet } 8 \text{ inches} \\ \hline \end{array}$$

$$\begin{array}{r} 7 \text{ feet } 4 \text{ inches} \\ - 2 \text{ feet } 10 \text{ inches} \\ \hline \end{array}$$

$$\begin{array}{r} 33 \text{ feet } 2 \text{ inches} \\ - 9 \text{ feet } 6 \text{ inches} \\ \hline \end{array}$$

Multiplication and Division of Linear Measurements
Answers are on page 17.



$$\begin{array}{r} 3 \text{ yards } 1 \text{ foot} \\ \times \quad \quad \quad 4 \\ \hline 12 \text{ yards } 4 \text{ feet} = 13 \text{ yards } 1 \text{ foot} \end{array}$$

$$\begin{array}{r} 4 \text{ miles } 2000 \text{ feet} \\ \times \quad \quad \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \text{ feet } 6 \text{ inches} \\ \times \quad \quad \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \text{ yards } 2 \text{ feet} \\ \times \quad \quad \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \text{ feet } 6 \text{ inches} \\ \times \quad \quad \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \text{ feet } 10 \text{ inches} \\ \times \quad \quad \quad 3 \\ \hline \end{array}$$

$$\frac{4 \text{ yards } 2 \text{ feet}}{2} = 2 \text{ yards } 1 \text{ foot}$$

$$\frac{4 \text{ miles } 2,000 \text{ feet}}{4}$$

$$\frac{6 \text{ feet } 6 \text{ inches}}{3}$$

$$14 \text{ yards } 2 \text{ feet} \div 2 =$$

$$3 \text{ feet } 9 \text{ inches} \div 3 =$$

$$33 \text{ feet } 9 \text{ inches} \div 3 =$$

Mixed Practice

Answers are on page 18.



$$5 \text{ miles} - 3 \text{ miles } 1,286 \text{ feet} \quad 15 \text{ feet } 7 \text{ inches} - 4 \text{ feet } 10 \text{ inches}$$

$$\frac{4 \text{ miles } 10 \text{ feet}}{2}$$

$$\begin{array}{r} 5 \text{ miles } 1000 \text{ feet } 11 \text{ inches} \\ \times \quad \quad \quad \quad \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \text{ miles } 4,000 \text{ feet } 9 \text{ inches} \\ + 6 \text{ miles } 1,180 \text{ feet } 8 \text{ inches} \\ \hline \end{array}$$

$$\begin{array}{r} 5 \text{ feet } 6 \text{ inches} \\ 4 \text{ feet } 2 \text{ inches} \\ 3 \text{ feet } 4 \text{ inches} \\ \hline 10 \text{ inches} \end{array}$$

$$\begin{array}{r} 11 \text{ inches} \\ - 9 \text{ inches} \\ \hline \end{array}$$

$$\begin{array}{r} 7 \text{ miles } 300 \text{ feet} \\ \times \quad \quad \quad 10 \\ \hline \end{array}$$

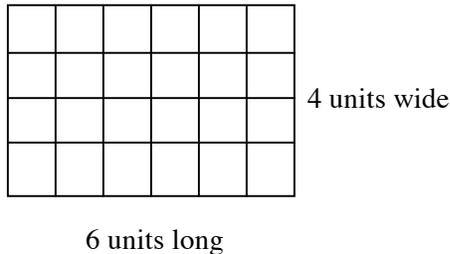
Mr. Jones hired a carpenter to extend a window in his kitchen. The original window measured 6 feet 9 inches across the top. He asked the carpenter to add 1 foot 9 inches and install a greenhouse shelf. What was the width of the new greenhouse window?

A tailor bought 6 1/2 yards of fabric to construct a sport jacket for a customer. The customer's size was 44 long. He used half of the fabric and kept the rest for future use. How many *inches* of fabric did the tailor have left? _____

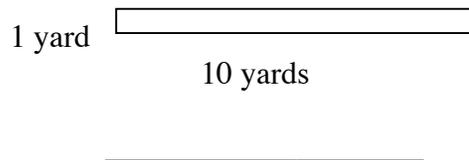
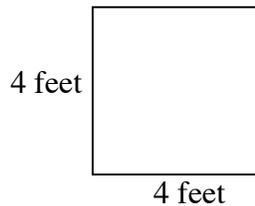
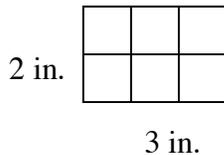
Answers are on page 18.

Area

Measuring the length and width of objects is also useful for finding the area on the surface. Area is measured in square units. Think of area as **tiling**. If you have a closet floor that is six feet x four feet, the area of the floor is 24 square units.



Find the area of a rectangle such as this closet by measuring the length, measuring the width, and then multiplying to find the number of square units that will tile the surface. In other *Video Partners* workbooks there will be more work in finding areas of other plane figures, such as circles and trapezoids, using formulas. For now, practice using the measurements of length and width to find the area of these rectangles in square units.



Answers are on page 18.

Liquid Capacity or Volume (dry measurements)



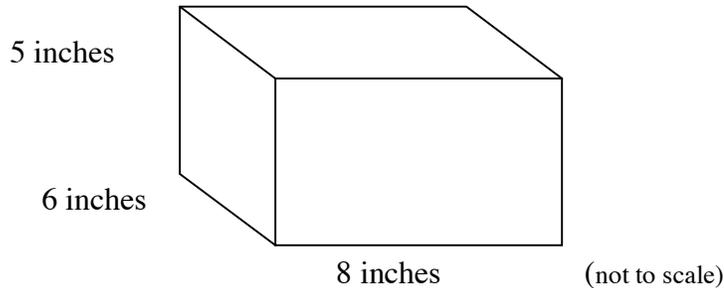
Measuring the quantity that objects will hold is finding the capacity or volume. Capacity and volume are measured in cubic units. Think of capacity or volume as **filling**.

Mary and her friends were selling lemonade during the neighborhood garage sales. They made each batch of lemonade by adding eight ounces of concentrate to three cans of water. It took two batches to fill each pitcher. The girls knew that eight ounces equals one cup. So each pitcher would hold eight cups of lemonade. They sold the lemonade in five-ounce paper cups. They filled each paper cup as close to the top as they could without spilling it. *About* how many paper cups could they sell from each batch?

Answer is on page 18.

Volume of a Rectangular Solid

We often want to know how much a box will hold if we are filling it with something for shipping. When we buy a shipping box, it will be sold with a label showing the number of cubic inches it will hold. To find the volume in cubic inches, we multiply the dimensions of length, width, and height. If a box is six inches wide, eight inches long, and five inches high, it will hold $6 \times 8 \times 5$ cubic inches. The volume of this box is 240 cubic inches. That means we could fill it with 240 cubes 1 inch x inch x 1 inch.



In other *Video Partners* workbooks, there will be more work in finding volumes of other solid figures, such as cylinders and pyramids, using formulas. For now, practice using the measurements of length, width, and height to find the volume of these rectangular solids in cubic units. Multiply the length x width x height. Record the answer in cubic units.

Answers are on page 18.

- a wrapping paper box that is 2 feet wide, 4 feet long, and 2 feet high
- a candy box that is 8 inches long, 12 inches wide, and $1 \frac{1}{2}$ inches high
- a box for an artificial Christmas tree that is one yard wide, 2 yards long, and $\frac{1}{2}$ yard high.

a. _____ b. _____ c. _____

Weight or Mass



We measure the mass of an object by weighing it. We use weight when we shop at the grocery store and read how many ounces of cereal are in the box, when we buy a pick-up truck, when we weigh ourselves at the gym or doctor's office, and when we read how many grams of fat or carbohydrate a certain food contains. We usually use the units of ounces, pounds, and tons when we weigh things using the U.S. Standard System. Gram is the basic unit of mass in the metric system. We may see the mass of products labeled in grams or kilograms at the stores where we shop.

Sofia and Jim Anderson were so excited when their first grandchild, Chandra, was born. She was 21 inches long and weighed 6 pounds, 13 ounces. As often happens with a newborn, she lost 4 ounces during the first week. How much did Chandra weigh when she was one week old? _____ Answer is on page 18.

Operations with Weight and Mass
Mixed Practice

Answers are on page 18.



$$\begin{array}{r} 3 \text{ pounds } 12 \text{ ounces} \\ + 9 \text{ pounds } 4 \text{ ounces} \\ \hline \end{array}$$

$$\begin{array}{r} 5 \text{ tons } 1000 \text{ pounds } 6 \text{ ounces} \\ - 3 \text{ tons } 1500 \text{ pounds } 4 \text{ ounces} \\ \hline \end{array}$$

$$\begin{array}{r} 12 \text{ pounds} \\ 4 \\ \hline \end{array}$$

If you are computing using different units of measurement in the same system, you should make the units the same before beginning the operation.

$$\begin{array}{r} 2 \text{ pounds} \\ 4 \text{ ounces} \end{array} \longrightarrow$$

Change both units to pounds or ounces before dividing.

$$2 \text{ pounds} = 32 \text{ ounces} \longrightarrow 32 \text{ ounces} \div 4 \text{ ounces} = 8 \quad \text{OR}$$

$$4 \text{ ounces} = 1/4 \text{ pound} \longrightarrow 2 \div 1/4 = 8$$

$$2 \text{ tons} \div 50 \text{ pounds}$$

$$\begin{array}{r} 3 \text{ pounds} \\ 8 \text{ ounces} \end{array}$$

$$1 \text{ kilogram} - 550 \text{ grams} =$$

$$13 \text{ ounces} \times 3 =$$

$$5 \text{ pounds} - 10 \text{ ounces} =$$

$$4 \text{ tons} - 1800 \text{ pounds} =$$

Time

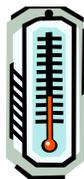
There are many measurements of time. We use seconds, minutes, days, weeks, months, years, centuries, and millennia to name a few. There are other measurements such as eons, periods, eras, milliseconds, and nanoseconds. Along with others, these measurements are used by historians and scientists.

On the GED Math Test, there will not be any questions asking you to read clocks or tell time. You may have questions that refer to time. It will be useful for you to know equivalents of time. You may have to interpret time lines, graphs, or charts that refer to time on any one of the GED Tests.



The McPherson family was traveling from California to Washington, D.C. The non-stop flight was six hours and twenty minutes. They were scheduled to arrive at Dulles International Airport at 6:10 p.m. Eastern Standard Time, which they knew was three hours later than Pacific Standard Time. What time did they leave California?

Answer is on page 18.



Temperature

The temperature scale we use in the United States and the United Kingdom is the Fahrenheit (F) scale. On this scale the boiling point of water is 212 degrees, and the freezing point of water is 32 degrees. In all other parts of the world, temperature is measured in degrees Celsius (C). On this scale, sometimes called the centigrade scale, the boiling point of water is 100 degrees. The temperature for the freezing point of water is 0 degrees.

On the formula page for the GED Math Test you will not see the formula for converting a temperature from one scale to the other, nor will you have to use this formula in the *Video Partners* workbook on formulas. Also, there are other temperature scales such as the Kelvin scale that are used by scientists but not in everyday life.

On the GED Math Test, Social Studies Test, and Science Test, you may have questions that refer to temperature. You may see temperatures in graphs, charts, or tables. You may have to use operations to solve problems referring to temperature. Practice some of these problems in this exercise. Answers are on page 18.



The average summer temperature in Sacramento, CA is 94° F. Although the city is considered hot, there is an average of only 19 days a year which are over 100°F. In 1997, there were many hot days, and the average summer temperature that year was 99.5°F. How many degrees over the usual average was the average in 1997? _____

The normal body temperature for people is 98.6°F. Because of a bodily function called homeostasis, that temperature is constant in a healthy person regardless of the temperature of the air. If a person is ill and runs a fever, the body temperature goes up. A fever of 104°F or greater is dangerously high and could cause brain damage or other problems. How many degrees above average is a fever of 104.2°? _____



Reptiles are cold blooded or ectothermic animals. Their body temperature adjusts to the temperature of the outside air. That is why most snakes go into dens or hibernate in the winter, and why you see lizards sunning themselves on rocks or logs on warm afternoons. The body temperature of the rubber boa ranges from 13.8°C to 32.2°C. What is the maximum change in temperature that a rubber boa could regulate by going from cold ground to lying for hours in the sun? _____

Quick Review:

Temperature	Fahrenheit	Celsius
Freezing point of water		
Boiling point of water		

Out into Space

Quadrominoes

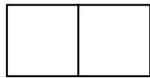


A domino is a plane figure made up of two squares joined together to form a common side from end to end. Sometimes dominoes have white dots that stand for numbers and are part of a popular game.

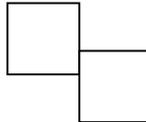


In this exercise we will use our spatial skills.

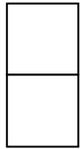
dominoes and other plane figures to practice



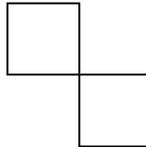
domino



not a domino (common side is not end to end)

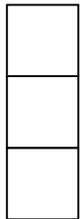
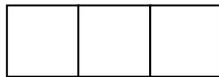


domino

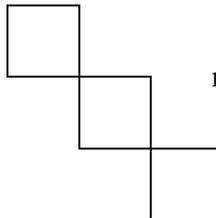


not a domino (no common side)

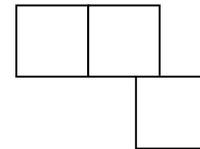
Triominoes are figures that are made of three squares each joined to at least one other square with a common side from end to end.



triominoes



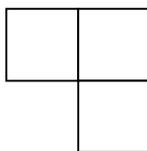
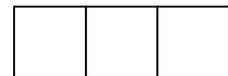
not triominoes



Flips and rotations are the same figure.

The triominoes above are rotations or flips of one another.

There are only two different triominoes. Here is what they look like:
and



Quadrominoes are figures that are made of four squares each joined to at least one other square with a common side from end to end. How many different quadrominoes are there? Write your guess here _____.

Answers are on page 18.

Draw all of the possible quadrominoes here:

Order of Operations Review

Parentheses ()

Please excuse my dear Aunt Sally.

Exponents - powers and roots

Multiplication and division - in order from left to right

Addition and subtraction - in order from left to right

Answers are on page 19.

$3 + 15 \times 2 =$

$(4-3) \times 8 =$

$4^2 + (8^2 - 3) =$

$12 + 6 \div 3 =$

$(5 + 6 + 7) \div 6 =$

$\frac{125}{5} \times 2 =$

$3 \times 2 \times (75 \div 25) =$

$(5 + 6 \times 3 \times 0) + 8 =$

$3/4 + 1/2 \times 7/8 =$

$10^3 + 56 =$

$16 - 0 \times 4 =$

$(4.5 + 3.8 - 4.2) + 1 =$

$14 - 6 + 10 \times 3 =$

$100 - 8^2 =$

$6^2 - 3^2 =$

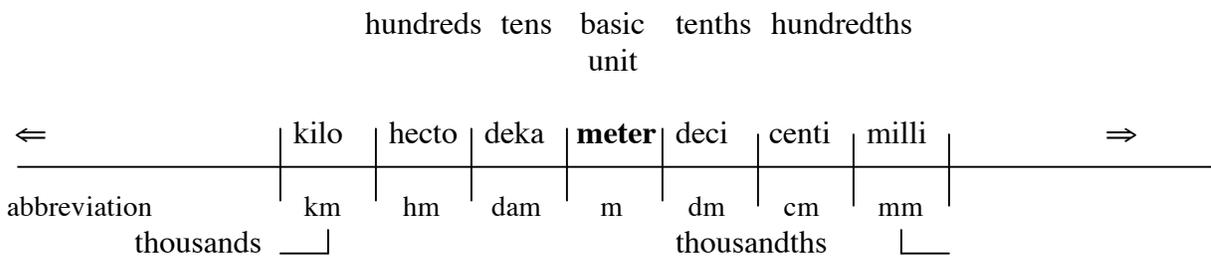
$9 \times 8 + 3 \times 5 - 4 \times 2 =$

The Metric System

The metric system of measurement is used throughout the world except in the United States. It is a system of measurement where the basic units for length, capacity, and mass are all related to each other. The multiples and parts of the basic units are powers of 10 just as our system of numbers. Each multiple or part of the basic units can be named by using prefixes. The most common prefixes are on the charts below. Other prefixes exist for the places that go on in each direction.

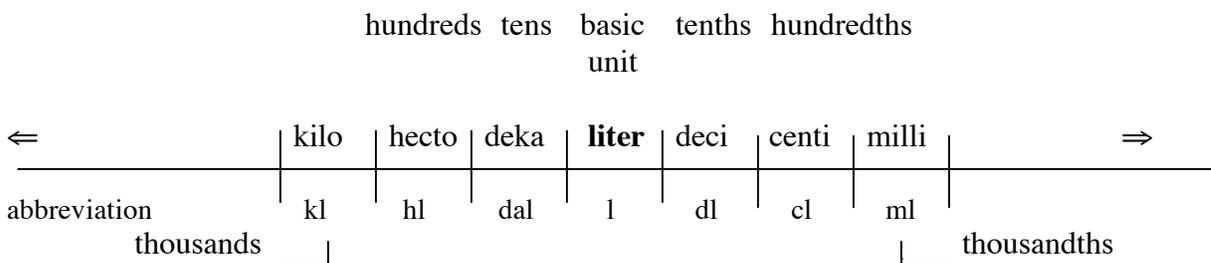
Charts of Metric Prefixes

Length



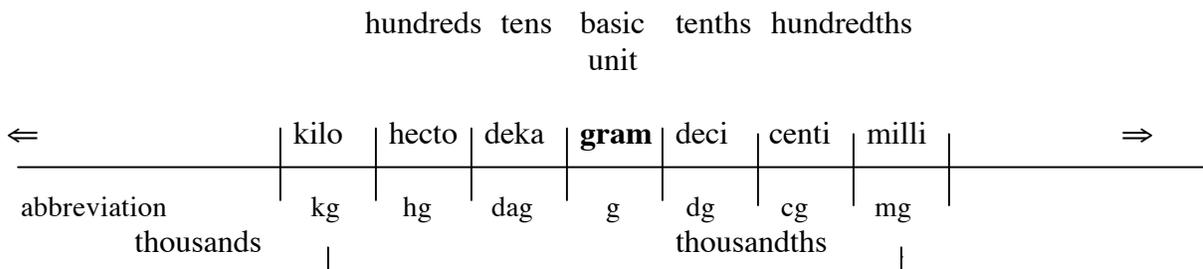
The basic unit for measuring length is the **meter**. A meter is a little longer than a yard or about 39 inches. The multiples of a meter are 10 meters or dekameter, 100 meters or hectometers (hectares), and 1000 meters or kilometers. Kilometers are the measures used for traveling distances. A kilometer is about 5/8 of a mile. The fractional parts of a meter include 1/10 of a meter or decimeter, 1/100 of a meter or centimeter, and 1/1000 of a meter or millimeter. A centimeter is about the length of a standard staple. A millimeter is about the length of the head of a pin. Metric abbreviations are not followed by a period.

Liquid Capacity/Volume



The basic unit for measuring liquid capacity is the **liter**. A liter is a little more than a quart. A liter is a cubic decimeter and so is directly related to a meter. It is used to measure gasoline and other liquids. Another common measure of capacity is the milliliter (ml) for liquids or cubic centimeter (cm³) for volume. It would fill a little box about the size of a sugar cube or take up the space of a sugar cube. These units are used in medicine and to measure small amounts of liquids or small volumes.

Mass



The basic unit for measuring mass is the **gram**. The standard for the gram was created by measuring a cubic centimeter of pure water in a vacuum. That mass was named one gram, so it is also related to the meter. Small things are weighed in grams, and larger things are weighed in kilograms. A gram is about the weight of a sugar cube. A kilogram is 2.2 pounds so is similar to holding two boxes of butter.

It is easy to go from one metric unit to another because it just means multiplying or dividing by powers of ten. The metric system does not use two units together the way we use pounds and ounces. It uses decimals to show parts of the larger unit. For example, 1 meter and 65 centimeters would be 1.65 meters.

While referring to the charts, change the units from one to another in this practice exercise. Answers are on page 19.

Linear

50 centimeters (cm) = .5 meters (m) 1.5 m = _____ cm 1 m = _____ dm

1 m = _____ dam _____ mm = 1.5 cm 450 m = _____ km

Liquid Capacity/Volume

1 liter = _____ dl _____ l = 2000 ml 1 l = _____ cc³ _____ ml = 1 l

.5 liter = _____ dl 575 ml = _____ cm³ 1 kl = _____ l 1 kl = _____ ml

How many plastic bottles (2 l) of soda did Karen have to buy to serve 25 children? She was using 175 ml paper cups. _____

Mass

1 g = _____ kg 1 g = _____ mg _____ kg = 2 g 500 g = _____ kg

6 kg = _____ cg 2 g = _____ dg _____ g = 4 kg 10 mg = _____ g

STRATEGY SESSION

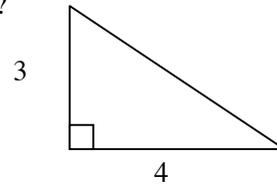


Use the Scratch Paper Provided at the Test Center as a Straight Edge or Ruler

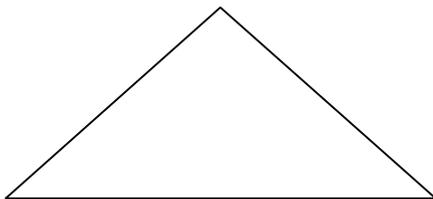
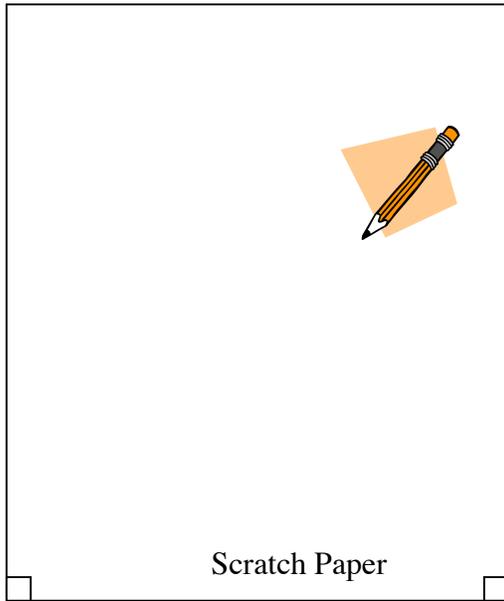
When you take the GED Math Test, you will be provided with scratch paper to use when you are solving problems. You will also be provided with a # 2 pencil to use when you bubble in your answer sheet. The scratch paper is a helpful tool to use when you are solving problems. Here are two valuable measurement uses for your scratch paper:

1. Use an edge of your scratch paper to create a ruler.
2. Use the scratch paper as a straight edge to estimate measurements of lines and angles.

1. What is the length of the missing side?



If you know one side is 3, make a little ruler with the edge of your scratch paper and mark 3 units. Measure the missing side and estimate the length.



2. All four corners of your scratch paper are 90 degree (90°) angles. When you see the little squares in a triangle or geometric figure, that means a 90° angle. Fold that corner to the other edge and see a 45° angle. If you want to estimate the measure of an angle use the corner or 45° fold as a way to estimate the angle you need to measure.

Use the Scratch Paper Provided at the Test Center as A Straight Edge or Ruler



GED Exercise

1. A famous long jumper jumped 8.95 meters in 1991. He is 1.75 meters tall. *About* how many times as he is tall did he jump?

- 1) 3
- 2) 4
- 3) 5
- 4) 6
- 5) 7



2. How many hours are 185 minutes?

- 1) 3 1/2 hours
- 2) 2 1/2 hours
- 3) 3 3/4 hours
- 4) 3 1/12 hours
- 5) 2 5/6 hours

3. An oil tank holding 280 gallons was $\frac{4}{5}$ full. How many gallons would a full tank hold?

- 1) 290 gallons
- 2) 300 gallons
- 3) 325 gallons
- 4) 350 gallons
- 5) 420 gallons

4. At 7:00 a.m. the outdoor temperature was -13° Celsius. By noon, the temperature had risen 25° . What was the temperature at noon?

- 1) 0° C
- 2) 12° C
- 3) 15° C
- 4) 20° C
- 5) 23° C

5. At the Sacramento Run for the Hungry on Thanksgiving in 2004, runners could choose 5k or 10k races. If 55 runners completed the 5k, and 110 runners completed the 10k, how many kilometers were run in all?

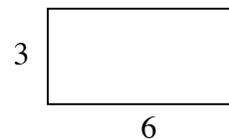
- 1) 1,000 km
- 2) 1,375 km
- 3) 1,525 km
- 4) 13,750 km
- 5) 15,000 km

6. Anita was using 32-inch wide panels to make new window coverings. The panels were 84 inches long after hemming. How many panels did she need to cover a window that was 8 feet wide?

- 1) 3
- 2) 4
- 3) 5
- 4) 6
- 5) 10



- 7.



What is the area of a rectangular garden that is three feet wide and 6 feet long?

- 1) 9 square feet
- 2) 12 square feet
- 3) 18 square feet
- 4) 24 square feet
- 5) 36 square feet

Answers and Explanations

Words You Need to Know page 1

1. d.
2. e.
3. a.
4. b.
5. c.

Equivalent Measurements page 3

32	21	
1,500	1/2	
4	.5	
36	2	2
150	104	9
2,640	300	8
8	500	

About Math and Life page 4

84 pavers
18 yards of sod

Linear Measurement page 4

foot	mile
mile	inch
yard	foot
foot	foot
yard	yard
inch	inch

Operations with Linear Measurement

Addition and Subtraction page 5

6 yards	6 miles, 3,500 feet	5 feet, 2 inches
9 yards, 1 foot	1 foot, 1 inch	13 feet, 5 inches

Subtraction with Borrowing page 5

1 yard, 2 feet, 10 inches	4 feet, 6 inches	23 feet, 8 inches
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Multiplication and Division page 6

13 yards, 1 foot	8 miles, 4,000 feet	11 feet
23 yards, 1 foot	7 feet	11 feet, 6 inches
2 yards, 1 foot	1 mile, 500 feet	2 feet, 2 inches
7 yards, 1 foot	1 foot, 3 inches	11 feet, 3 inches

Mixed Practice

page 6

1 mile, 3,944 feet

10 feet, 9 inches

2 miles, 5 feet

31 miles, 725 feet, 6 inches

16 miles, 5181 feet, 5 inches

13 feet, 10 inches

2 inches

70 miles, 3,000 feet

8 feet, 6 inches

117 inches

Area

page 7

6 square inches

16 square feet

10 square yards

Liquid Capacity

page 7

About 13 paper cups

Volume

page 8

16 cubic feet

144 cubic inches

1 cubic yard

Weight or Mass

page 8

6 pounds, 9 ounces

Operations with Weight or Mass

page 9

13 pounds

1 ton, 1,500 pounds, 2 ounces

3 pounds

80

6

450 grams

39 ounces or 2 pounds, 7 ounces

70 ounces or 4 pounds, 6 ounces

3 tons, 200 pounds

Time

page 9

8:50 a.m. PST

Temperature

page 10

5.5 F

5.6° F

18.4° C

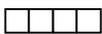
Quick Review

page 10

Temperature	Fahrenheit	Celsius
Freezing point of water	32	0
Boiling point of water	212	100

Quadrominoes

page 12



There are five different quadrominoes.

Order of Operations Review

page 12

33	8	77	14
3	50	18	13
1 3/16	1,056	16	5.1
38	36	27	79

Metric System

page 14

Linear

.5	150	10
10	15	.45

Liquid Capacity/Volume

10	2	1,000	1,000
5	5.75	1,000	1,000,000
3 bottles			

Mass

.001	1,000	.002	.5
600,000	20	4,000	.001

GED Exercise

page 16

1. 3)
2. 4)
3. 4)
4. 2)
5. 2)
6. 1)
7. 3)