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ABSTRACT

An extensive list of criterion-referenced metric test items are published in this booklet for use by educators in levels K-8. Multiple-choice tests are referenced to the goals and behavioral objectives published in "Metrics in the K-8 Curriculum." Each test item is labeled according to grade level, broad goal, and behavioral objective. Questions for the kindergarten level are designed for a one-to-one setting. There are two choices for each item. At levels 1 and 2, the teacher reads each item aloud; the students mark their own papers. Again there are two choices. For children who can read with average skill in levels 3 to 8, a written test is given with three choices at levels 3-4, and four at levels 5-8. If reading level warrants, the teacher may read aloud and/or use transparencies. (MP)

# METRICS THE MEASURE OF YOUR FUTURE

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May, 1977



## CRITERION-REFERENCED METRICS TESTS

Levels K-8, Form A



For use in the Winston-Salem/Forsyth County School System

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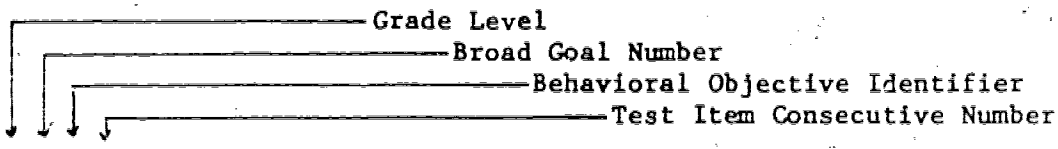
C. Douglas Carter, Special Assistant for Instruction

ESEA Title IV-C - Grant No. 69-77-028
Division of Development, North Carolina Department of Public Instruction

CRITERION-REFERENCED METRICS TESTS, K-8, FORM A

Numbers: Even-numbered items are the same as those on the original set published in Metrics in the K-8 Curriculum, which lists the goals and behavioral objectives to which these refer. The numbers preceding test items are:




K.1.1.1

When students will be marking directly on their papers, the tests may be used exactly as printed, with an identifying number or name written at the top of the page. If mechanical checking forms (computer test sheets) are being used, it is preferable when duplicating tests to block out all the test item consecutive number to avoid possibility of confusion.

Kindergarten: The teacher/tester reads each question to the child and marks his response on the answer sheet in a one-to-one setting. Caution should be exercised - do not "explain" an item. If a question is asked, re-read the item, say "Thank you" to whatever response is made, then go to the next question.

Levels 1 and 2: The teacher reads each item aloud; the students mark their own paper. An overhead transparency of the test page may be used to help avoid confusion as to which item is being read - the tests are not intended to measure reading skills except in metric words and symbols. If circling correct answers is preferred, simply give that direction orally to the group.

Levels 3 to 8: For children who can read with average skill, use of a computer answer sheet makes data-collection easier. It may be necessary to plan a preliminary test-sophistication session if such sheets have not been used before at the given grade level. If reading level warrants, the teacher may read aloud and/or use transparencies.

Choices: The number of choices to be considered for each item is two at levels K-2, three at levels 3-4, and four at levels 5-8.

LEVEL K - METRIC PROJECT TEST

NOTE: The test administrator should have on his table:

A meter stick
A 30-cm ruler
A decimeter ruler
A long pencil
A short pencil

K.1.1.1 The tester says "I am going to say two words. Will you tell me the one that is metric? Inch. Meter. Which is metric?"

Mark (a) Correct response (b) Incorrest response - inch

2. Tester says the word only once, child responds: "Please say the word centimeter for me."

Mark (a) said the word easily (b) did not say it well

K.2.1.3 Tester: "When you say the word 'centimeter', are you talking about how hot something is?"

Mark (a) correct response - no (b) incorrect - yes

4 Tester: "When you say the word 'meter', are you talking about how long something is?"

Mark (a) correct response - yes (b) incorrect - no

K.3.1.5 Tester places together the 30-cm ruler and the decimeter ruler and says: "Please point to the ruler that is shorter."

Mark (a) correct resp. - shorter ruler (b) incorrect resp. - longer ruler

6 Tester places together the two pencils and says: "Please point to the pencil that is longer."

Mark (a) Correct - longer (b) Incorrect - shorter

K.4.1.7 Tester places together the rulers and the meter stick and says: "Please point to something that is shorter than a meter stick."

Mark (a) correct choice (b) incorrect - the meter stick

8 Tester indicates all items on the table and says: "Of all these things, which one is as long as a meter stick?"

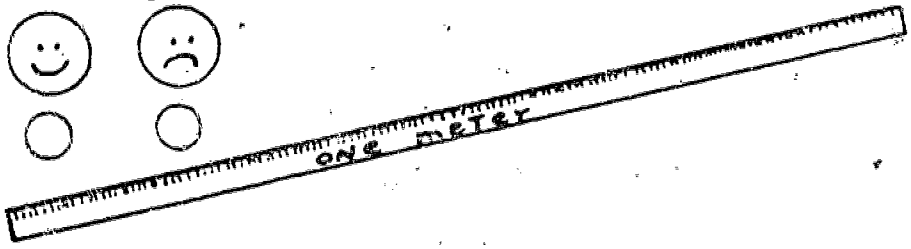
Mark (a) correctly chose meter stick (b) incorrectly chose any item

Winston-Salem/Forsyth Metric Education Project - ESEA Title IV-C

LEVEL 1-A - METRIC PROJECT TEST (page one)

1.1.1 1 Is a meter stick longer than your arm?

2 Is this a picture of a meter stick?




1.1.2 3 Is this line one centimeter long?

4 Is the shaded part of the ruler one centimeter long?

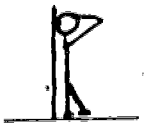

1.2.1 5 Which would you measure with a meter stick?

meter liter

6 Can you measure a centimeter on a meter stick?

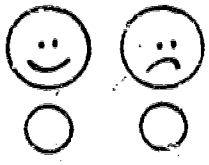
1 cm

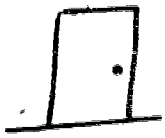
1.2.2 7 Is your teacher exactly one centimeter tall?



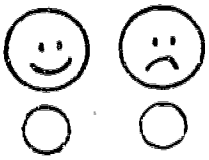
LEVEL 1-A - METRIC PROJECT TEST (page two)

8 Would you use a meter stick to measure how high a door is?

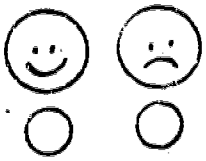




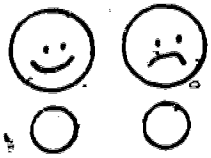
1.2.3 9 Is a liter used to measure lemonade?



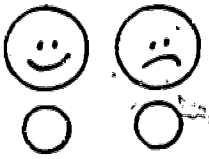
10 Would you measure milk by the meter?



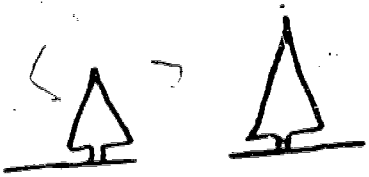

1.2.4 11 Does an elephant weigh more than a kilogram?



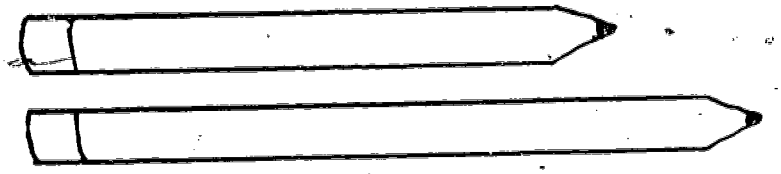
12 Would you measure your weight by kilograms?



1.3.1 13 Which is shorter? Draw a circle around it.

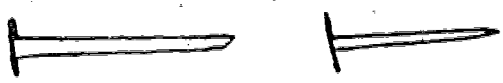


14 Circle the shorter pencil.



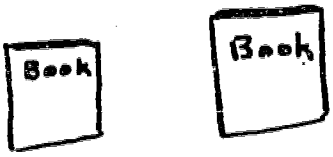
LEVEL 1-A - METRIC PROJECT TEST (page three)

1.3.2 15 Which is longer? Draw a circle around it.

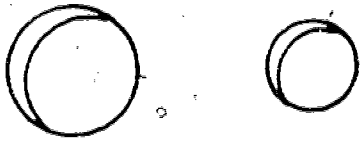


16 Circle the longer car.

1.3.3 17 Circle the smaller book.



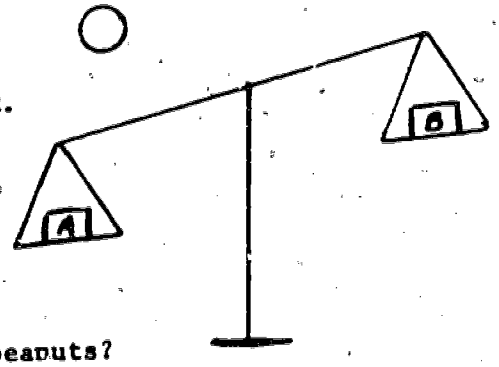

18 Circle the larger ball.



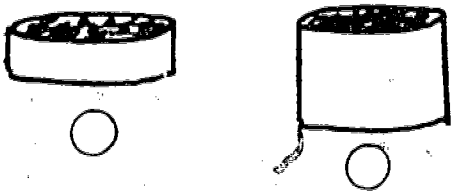
1.3.4 19 On a scale, which is heavier?

A crayon ○ A paper clip ○

20 Circle the heavier box.

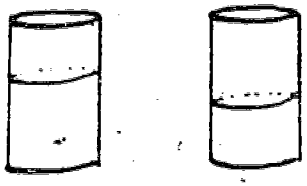



1.3.5 21 Which will hold more peanuts?

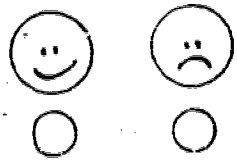


LEVEL 1-A - METRIC PROJECT TEST (page four)

22 Circle the glass that has more milk.

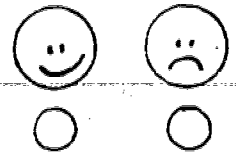


1.4.1 23 Is your head the size of a meter?

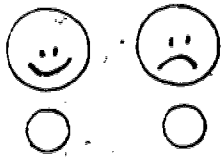


24 Circle the one as big as one centimeter.

1.7.1 25 Metrics is only for mothers and dads.



26 When you are ten years old, everyone will use the metric system for measuring.



LEVEL 2-A - METRIC PROJECT TEST (page one)

2.1.1 1 If the word is correctly spelled, shade in the happy face; if it is not, shade in the sad face.

gram

2 If the word is correctly spelled, shade in the happy face; if it is not, shade in the sad face.

leter

2.1.2 3 If the symbol is correct, shade in the happy face, if not, shade in the sad face.

meter m

4 If the symbol is correct, shade in the happy face, if not, shade in the sad face.

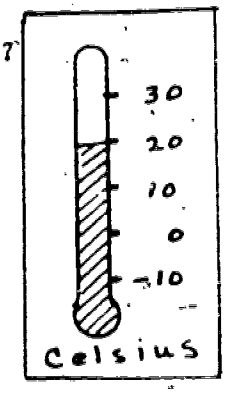
centimeter cg

2.1.3 5 The temperature is: Shade the correct answer.

0°C 32°C


6 What temperature is shown by the thermometer? Shade the correct answer.

-10°C 20°C




2.2.1 7 Is a centimeter less than one meter? Shade the correct answer.

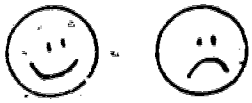
yes no

LEVEL 2-A - METRIC PROJECT TEST (page two)

8 How many centimeters make a meter? Shade the correct answer.

| 75 cm | 100 cm |
|---|---|

2.2.2 9 If the word is a metric word, shade the happy face, if not shade the sad face.

meter 

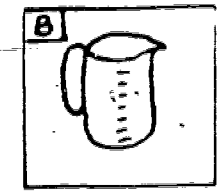
10 If the word is a metric word, shade the happy face, if not shade the sad face.

pound 

2.2.3 11 Which would you use to measure a broom? Shade the answer.

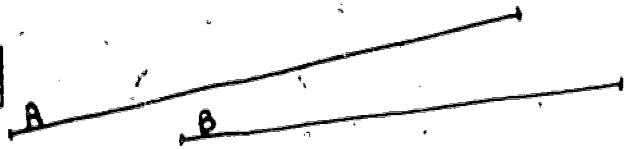
| meter | liter |
|---|---|

12 Which would you use to measure how long a table is. Shade the answer.

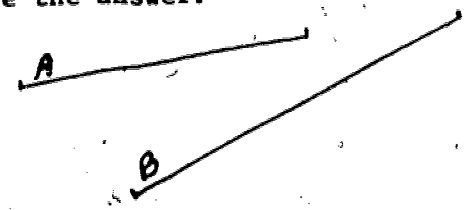

2.3.1 13 Is line A shorter than Line B? Shade the answer.

| yes | no |
|---|---|




14 Which line is longer? Shade the answer.

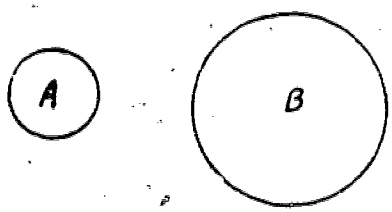
| A | B |
|---|---|



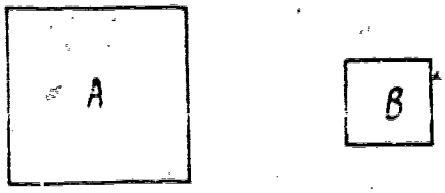
LEVEL 2-A - METRIC PROJECT TEST (page three)

2.3.2 15 Is circle A larger than Circle B? Shade the answer.

yes | no

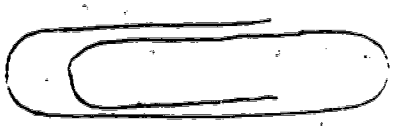



16 Shade the square with the smaller area.




2.4.1 17 How long is the paper clip? Shade the answer.

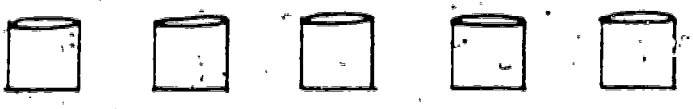
5 cm | 10 cm

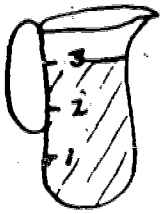


18 How many centimeters long is the pencil? Shade the answer.

6 cm | 12 cm

2.4.2 19 The pitcher has three liters of milk in it. Each cup will hold one liter. How many cups can you fill from the pitcher? Shade the answer.





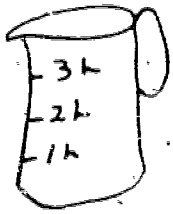

3 cups | 5 cups

20 How would you measure milk? Shade the answer.

liter | centimeter

LEVEL 2-A - METRIC PROJECT TEST (page four)

2.4.3 21 This cup has a liter of juice in it. If you pour it into the pitcher, what mark will it reach up to? Shade the answer.




1 L  2 L

22 How much milk is in the measuring cup? Shade the answer.

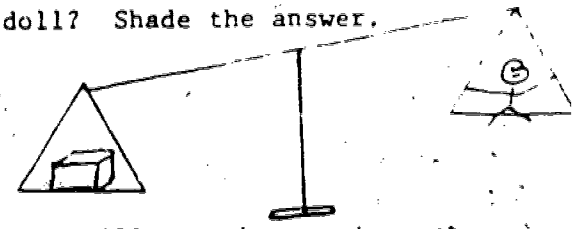
1 L  2 L


2.4.4 23 When you find your weight on the metric scales, which word do you use to tell others about it?

grams  kilograms

24 Which is heavier, the box or the doll? Shade the answer.

Box  Doll



2.7.1 25 When you are 10 years old, only girls will use the metric system. Shade the answer.

yes  no

26 Which will most people in the world use to measure length when you are 10 years old? Shade the answer.

yard stick  meter stick

LEVEL 3-A - METRIC PROJECT TEST (page one)

3.1.1 1 The correct word for the symbol L is:

(a) kilogram (b) gram (c) liter

2 The correct word for the symbol kg is:

(a) gram (b) liter (c) kilogram

3.1.2 3 The smallest prefix in this group is:

(a) deci (b) centi (c) milli

4 Choose the largest unit in this set:

(a) meter (b) kilometer (c) centimeter

3.1.3 5 On the Celsius scale normal body temperature is:

(a) 37°C (b) 40°C (c) 90°C

6 Water boils at:

(a) 20°C (b) 37°C (c) 100°C

3.2.1 7 One meter is equal to:

(a) 10 cm (b) 100 cm (c) 1000 cm

8 One kilometer is equal to:

(a) 10 meters (b) 100 meters (c) 1000 meters

3.3.1 9 Mark the symbol for square centimeters:

(a) $cm^3$ (b) $cm^2$ (c) cm

10 Mark the largest area represented by these measurements:

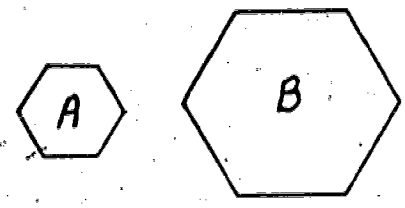
(a) 15 $cm^2$ (b) 5 $cm^2$ (c) 10 $cm^2$

3.3.2 11 Which describes A compared to B?

(a) A is smaller than B

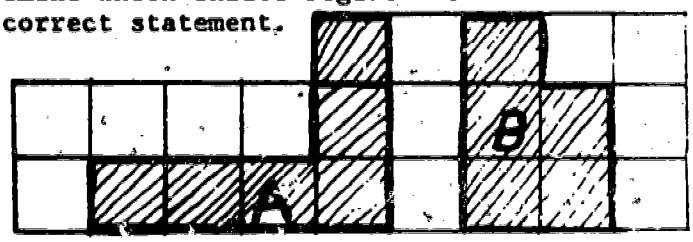
(b) A is larger than B

(c) A is equal to B



LEVEL 3-A - METRIC PROJECT TEST (page two)

12 Using the cm grid, determine which shaded figure has the larger area. Mark the correct statement.




(a) A is larger

(b) B is larger

(c) A equals B

3.4.1 13 Estimate the length of a chalkboard eraser.

(a) 12 cm (b) 3 cm (c) 15 cm

14 Estimate the width of this test sheet in centimeters:

(a) 10 cm (b) 20 cm (c) 30 cm

3.4.2 15 The length of a classroom is nearer:

(a) 2 decimeters (b) 10 meters (c) 25 centimeters

16 To measure a classroom, you would use:

(a) meters (b) centimeters (c) kilometers

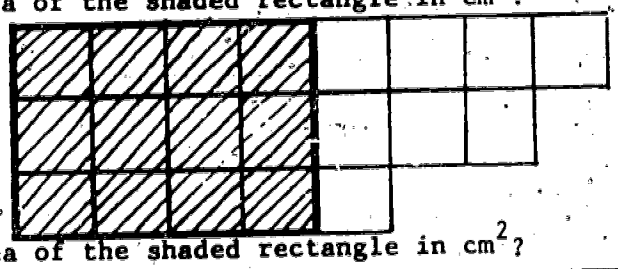
3.4.3 17 The length of a new pencil is usually about:

(a) 2 dm (b) 3 dm (c) 5 dm

18 The length of this page from top to bottom is about:

(a) 2 dm (b) 3 dm (c) 5 dm

3.4.4 19 What is the area of the shaded rectangle in $cm^2$?

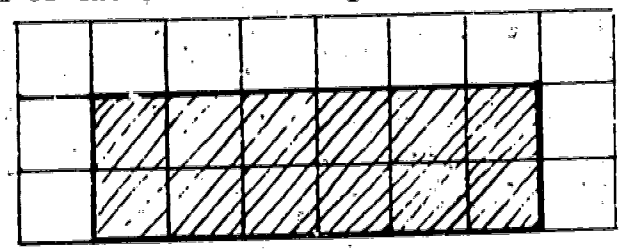


(a) 20 $cm^2$

(b) 14 $cm^2$

(c) 12 $cm^2$

20 What is the area of the shaded rectangle in $cm^2$?



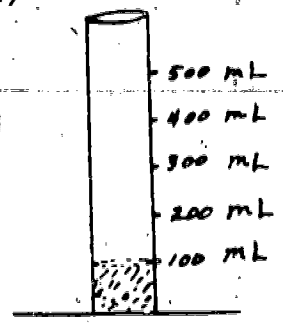
(a) 16 $cm^2$

(b) 20 $cm^2$

(c) 12 $cm^2$

LEVEL 3-A - METRIC PROJECT TEST (page three)

3.4.5 21 The liquid in the beaker measures about:

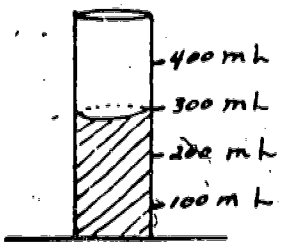



(a) 100 mL

(b) 300 mL

(c) 500 mL

22 The liquid in the beaker measures about:




(a) 100 mL

(b) 400 mL

(c) 300 mL

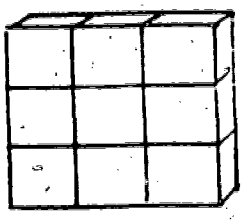
3.4.6 23 If this ice cube is two cubic centimeters, then what is the volume of two ice cubes this size?

(a) 4 $cm^3$

(b) 8 $cm^3$

(c) 6 $cm^3$

24 The stack of centimeter cubes has a volume of

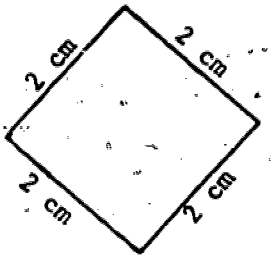


(a) 12 $cm^3$

(b) 9 $cm^3$

(c) 16 $cm^3$

3.4.7 25 The figure at the right has four equal sides. What is the perimeter of this figure?




(a) 2 cm

(b) 8 cm

(c) 16 cm

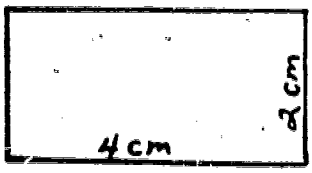
LEVEL 3-A - METRIC PROJECT TEST (page four)

26 The perimeter of this rectangle is:

(a) 6 cm

(b) 8 cm

(c) 12 cm




3.4.8 27 The average-size box of crayons weighs about 40 g. Therefore, about how much would two average size boxes of crayons weigh?

(a) 20 g

(b) 80 g

(c) 30 g

28 If on a scale your pencil exactly balances with nine cubes of one gram each, your pencil is said to weigh:

(a) 9 kilograms

(b) 9 cubic centimeters

(c) 9 grams

3.4.9 29 A student's weight is measured in:

(a) meters (b) kilograms (c) centimeters

30 A student in third grade is more likely to be:

(a) 5 meters tall (b) 125 centimeters tall (c) 60 centimeters tall

3.5.1 31 The difference between 967 g and 560 g is:

(a) 407 kg

(b) 307 mg

(c) 407 g

LEVEL 3-A - METRIC PROJECT TEST (page five)

32 The sum of 37 cm and 42 cm is:

(a) 79 cm

(b) 79 m

(c) 457 cm

3.6.1 33 Choose the line segment that is 10 cm long:

(a) 

(b) 

(c) 

34 Choose the line that is 3 cm long:

(a) line A 

(b) line B 

(c) line C 

3.7.1 35 Which of these terms is <u>not</u> in the metric system?

(a) pound

(b) gram

(c) liter

36 Which of these is a measuring system?

(a) the school system

(b) the metric system

(c) the social system

LEVEL 4-A - METRIC PROJECT TEST (page one)

4.1.1 1 Which of the following means 0.01?

(a) deka (b) deci (c) centi

2 Which of the following means "100 times"?

(a) centi (b) hecto (c) deka

4.1.2 3 Choose the correct symbol for kilogram:

(a) kL (b) dg (c) kg

4 Choose the correct symbol for dekaliter:

(a) kL (b) dL (c) daL

4.1.3 5 When you see a temperature of -28°C, you should think:

(a) I need a coat (b) I need a sweater (c) I need a bathing suit

6 When you see a temperature reading of -10°C, you should think:

(a) very hot (b) comfortable (c) very cold

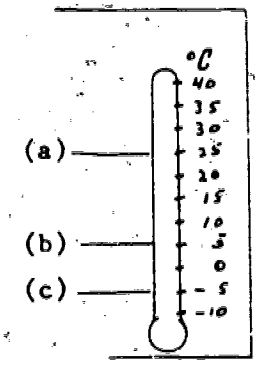
4.2.1 7 One kilogram is equal to:

(a) 1000 grams (b) 100 grams (c) 10 grams

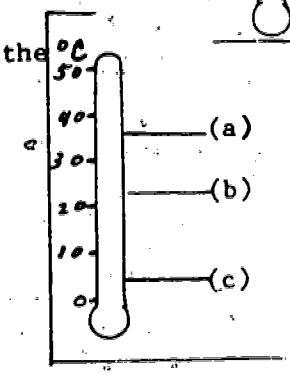
8 One square meter is equal to:

(a) 100 square decimeters
(b) 100 square centimeters
(c) 100 square millimeters

4.2.2 9 On the thermometer at the right, choose the letter that shows a temperature of -5°C.




10 On the thermometer at the right, choose the letter that shows a temperature of 23°C.



LEVEL 4-A - METRIC PROJECT TEST (page two)

4.3.1 11 Choose the largest measure:

(a) 62 $cm^2$ (b) 62 $m^2$ (c) 62 $dm^2$

12 Choose the smallest measure:

(a) 77 $cm^2$ (b) 77 $dm^2$ (c) 77 $m^2$

4.3.2 13 Choose the smallest of the measures:

(a) 3 $dm^3$ (b) 4 $dm^3$ (c) 2 L

14 Choose the largest of the measures:

(a) 2 $dm^3$ (b) 5 L (c) 10 dL

4.4.1 15 The width of the smile is:

(a) 20 mm (b) 10 mm (c) 15 mm

16 The length of the pencil is about:

(a) 20 mm (b) 60 mm (c) 100mm

4.4.2 17 The length of the rubber band is about:

(a) 35 mm

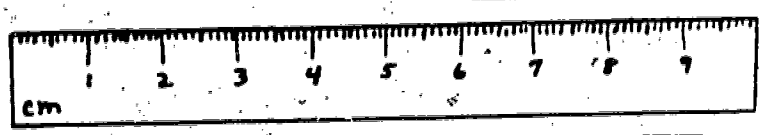
(b) 4 mm

(c) 40 mm

18 The length of the paperclip is:

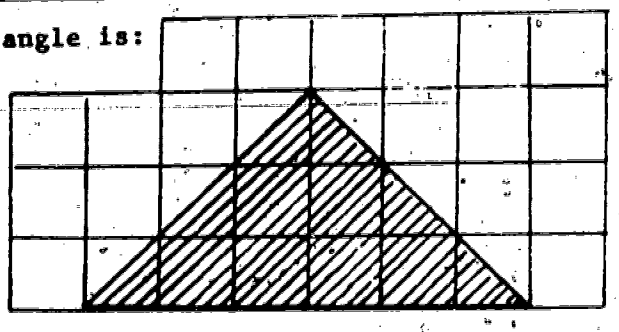
(a) 13 mm

(b) 30 mm




(c) 3 mm

4.4.3 19 The area of the triangle is:



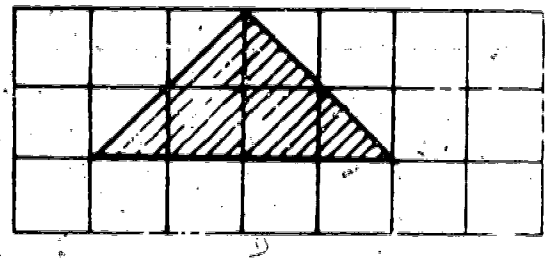
(a) 18 $cm^2$

(b) 9 $cm^2$

(c) 16 $cm^2$

LEVEL 4-A - METRIC PROJECT TEST (page three)

20 The area of the triangle is:

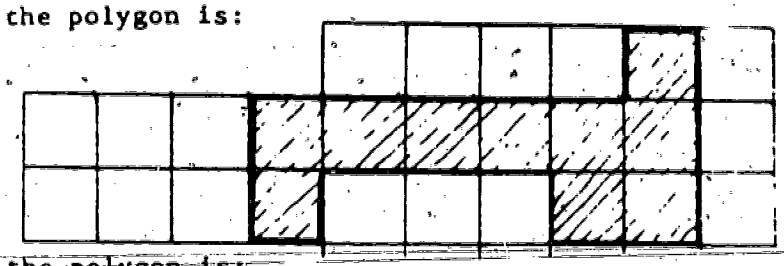


(a) 4 $cm^2$

(b) 6 $cm^2$

(c) 8 $cm^2$

4.4.4 21 The perimeter of the polygon is:

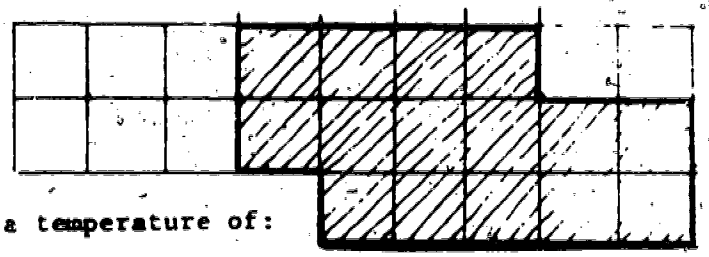


(a) 10 cm

(b) 15 cm

(c) 20 cm

22 The perimeter of the polygon is:

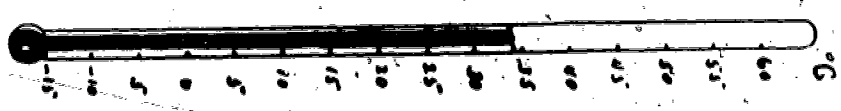


(a) 9 cm

(b) 15 cm

(c) 18 cm

4.4.5 23 The thermometer shows a temperature of:

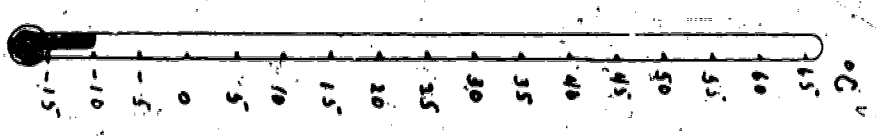


(a) 35°C

(b) 60°C

(c) 34°C

24 The thermometer shows a temperature of:



(a) -10°C

(b) 20°C

(c) 50°C

4.5.1 25 Find the quotient:

(a) 5 m

$5\overline{)20m}$

(b) 4 m

(c) 4

LEVEL 5-A - METRIC PROJECT TEST (page one)

5.1.1 1 From the list of symbols, choose one that matches the word dekameter:

(a) dm (b) dkm (c) dam (d) dmr

2 From the list of wrods choose one that matches the symbol kg:

(a) kilometer (b) gram (c) liter (d) kilogram

5.1.2 3 You might ski at:

(a) 40°C (b) 25°C (c) 15°C (d) -5°C

4 Choose the season of the year you think a temperature of 40°C might represent:

(a) spring (b) summer (c) fall (d) winter

5.2.1 5 Name the unit you would choose to measure an apple:

(a) kg (b) g (c) mg (d) m

6 1 kilogram is equal to:

(a) 10 g (b) 1000 mg (c) 100 g (d) 1000 g

5.2.2 7 Seven liters of ice tea should weigh about:

(a) 7 g (b) 70 g (c) 700 g (d) 7 kg

8 1 $cm^3$ is equal to:

(a) 10 liters (b) 100 liters (c) 0.001 liter (d) 1 liter

5.3.1 9 How many liters will fill 1 $dm^3$?

(a) 1 liter (b) 1.5 liters (c) 2 liter (d) 0.5 liter

10 Choose the largest measure:

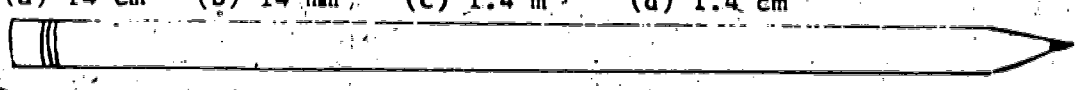
(a) 3.7 $dm^3$ (b) 23.5 L (c) 4.2 kL (d) 48.3 $cm^3$

5.4.1 11 Which would you estimate to be heaviest in grams?

(a) blackboard eraser (b) piece of chalk (c) math book (d) paperclip

12 A reasonable estimate of the length of the pencil is:

(a) 14 cm (b) 14 mm (c) 1.4 m (d) 1.4 cm

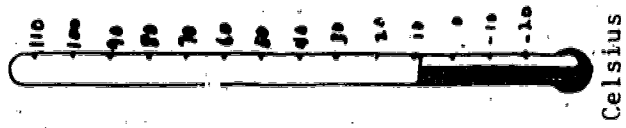


LEVEL 5-A - METRIC PROJECT TEST (page two)

5.4.2 13 Some water was boiled, then allowed to cool for several minutes in the classroom. It's temperature was then:

(a) 95°C (b) 20°C (c) 8°C (d) 40°C

14 This thermometer was just taken from a beaker of water. About what temperature does it show?




(a) 50°C (b) -15°C (c) 8°C (d) 25°C

5.5.1 15 A 500 mL cup filled half full will contain:

(a) 5 mL (b) 1 L (c) 250 mL (d) 50 mL

16 The best unit to use for measuring the liquid in a teaspoon is:

(a) $m^3$ (b) $cm^2$ (c) L (d) mL

5.5.2 17 Find the sum: 4.25 meters plus 2.5 meters is equal to:

(a) 6 m (b) 6.75 m (c) 1.75 m (d) 4.50 m

18 Find the difference:

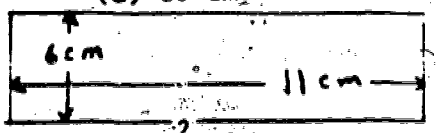
$$\begin{array}{r} 4.2\ \text{m} \\ -\ 3.6\ \text{m} \\ \hline \end{array}$$

(a) 78 m (b) 6 m (c) 7.8 m (d) 0.6 m

5.5.3 19 A rectangle is 10 cm long and 10 cm wide. Find the area:

(a) 40 $cm^2$ (b) 100 $cm^2$ (c) 20 $cm^2$ (d) 10 $cm^2$

20 A rectangle has measurements as shown: Find the area.




(a) 17 $cm^2$ (b) 5 $cm^2$ (c) 66 $cm^2$ (d) 1.7 $m^2$

5.5.4 21 What is the total length to the nearest 0.1 meter of two pieces of cloth each measuring 5.26 meters?

(a) 25 m (b) 10.5 m (c) 10.4 m (d) 10.52

22 The measurement "3 meters 7 decimeters" may be written as:

(a) 370 dm (b) 37 m (c) 0.37 dm (d) 3.7 m

LEVEL 5-A - METRIC PROJECT TEST (page three)

5.5.5 23 1.7 L = _____ mL

(a) 17 (b) 1.7 (c) 170 (d) 1700

24 700 mm = _____ dm

(a) 7 (b) 70 (c) 700 (d) 7000

5.6.1 25 A equilateral triangle has three equal sides, each 3.5 cm long. What is the perimeter of the triangle:

(a) 3.8 cm (b) 7 cm (c) 10.5 cm (d) 12.25 cm

26 Sara has a bag of peanuts with a mass of 576 grams that she wants to share equally with her classmates. There are 32 in her class. How many grams will each student receive?

(a) 12 g (b) 21 g (c) 9 g (d) 18 g

5.7.1 27 The metric system was planned to be:

(a) cheap (b) heavy (c) easy (d) short

28 The metric system was invented by:

(a) Jacob Astor
(b) Benjamin Franklin
(c) The French Academy of Science
(d) U.S. National Mathematics Society

5.8.1 29 The metric system always uses this prefix to mean 100:

(a) milli (b) centi (c) deka (d) hecto

30 Choose the best statement:

(a) All metric words start with an m.
(b) Metric prefixes always come after the root word.
(c) Metric root words are written in Chinese.
(d) Metric prefixes always mean the same with any root word.

5.0.1 31 If you buy 10 pounds of potatoes, you have about _____ kilograms.

(a) 5 (b) 10 (c) 20 (d) 1

32 A meter is:

(a) about the same as a foot (c) a little more than a yard
(b) equal to a yard (d) a little less than a yard.

LEVEL 6-A - METRIC PROJECT TEST (page one)

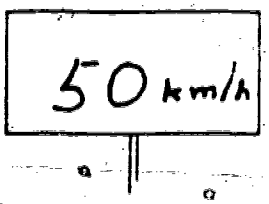
6.1.1 1 Choose the correct symbol to match the given words:
kilometers per second

(a) m/ (b) km/s (c) km/h (d) kps

2 Choose the words that match the given symbol: km/h

(a) kilometers and hectares
(b) kilometers per hour
(c) kilometers divided by hectometers
(d) none of these

6.1.2 3 The road sign at the right means:




(a) the speed limit is 50 kilometers per hour
(b) 50 minutes to the nearest town
(c) 50 meter clearance
(d) 50 kilometers to the hotel

4 The road sign at the right means:


(a) the speed limit is 150 kilometers per hour
(b) Marion weighs 150 kilograms
(c) Marion is 150 kilometers away
(d) The population of Marion is 150 people

6.1.3 5 The centimeter cube is represented by the symbol:

(a) $dm^3$ (b) $cm^3$ (c) $mm^2$ (d) $hm^2$

6 Mark the combination that "$m^2$" represents:

(a) 1 m x 1 m (b) 1 dm x 1 dm (c) 10 cm x 10 cm (d) 10 m x 10 m

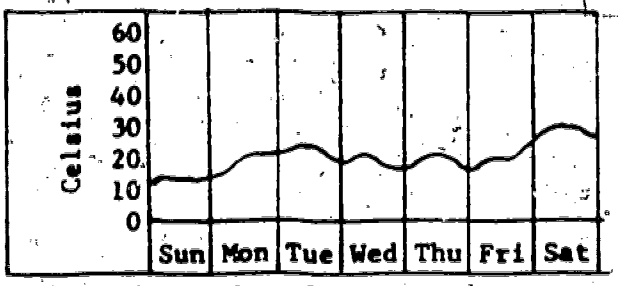
6.1.4 7 Which day was a good day for swimming?

(a) Monday

(b) Saturday

(c) Wednesday

(d) Sunday




8 The highest temperature on Tuesday above was about:

(a) 40°C (b) 30°C (c) 25°C (d) 20°C

LEVEL 6-A METRIC PROJECT TEST (page two)

6.2.1 9 A hectare is equal to one:

(a) $dam^2$ (b) $m^3$ (c) $m^2$ (d) $hm^2$

10 A metric ton is equal to:

(a) 1000 g (b) 1000 liters (c) 1000 mg (d) 1000 kg

6.2.2 11 What unit would you use to measure the volume of a room?

(a) $dm^3$ (b) $cm^3$ (c) $m^3$ (d) hectare

12 1 kiloliter is equal to:

(a) 1000 $m^2$ (b) 1000 km (c) 10 000 $cm^3$ (d) 1000 liters

6.3.1 13 If you had a measurement in grams and wanted to change to larger units, you would choose:

(a) mg (b) km (c) L (d) kg

14 Choose the smallest measure:

(a) 150 g (b) 15 kg (c) 1500 mg (d) 1.5 t

6.4.1 15 Most candy bars will be weighed in:

(a) mg (b) g (c) kg (d) t

16 The most appropriate unit to use to express the mass of a car is:

(a) $cm^3$ (b) $dm^3$ (c) L (d) t

6.4.2 17 A warm bath would be about:

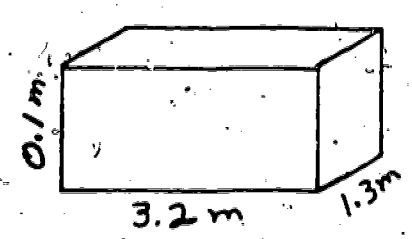
(a) 140°F (b) 40°C (c) 100°C (d) 75°C

18 When water boils vigorously, a thermometer in it will show:

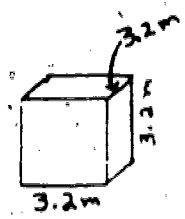
(a) 100°F (b) 90°C (c) 200°F (d) 100°C

6.5.1 19 Find the volume of a box with these dimensions:

(a) 4.16 $m^3$
(b) 0.416 $m^3$
(c) 4.16 $cm^2$
(d) 0.416 $cm^3$



LEVEL 6-A - METRIC PROJECT TEST (page three)




20 Find the volume of a cube as shown:

(a) 9.6 m (b) 38.4 m (c) 10.24 $m^3$ (d) 32.768 $m^3$

6.5.2 21 Multiply 4.32 dm by 3. What is the product?

(a) 1.296 m (b) 0.1296 dm (c) 129.6 dm (d) 12.96 m

22 Divide a length of 4.36 dm into four equal parts:

(a) 4.40 dm (b) 17.44 dm (c) 1.09 dm (d) 1.9 dm

6.5.3 23 1 $m^2$ is equal to :

(a) 1 $dm^2$ (b) 100 $dm^2$ (c) 1000 $cm^2$ (d) 10 $dm^2$

24 100 square meters is equal to:

(a) 10 $dm^2$ (b) 10 $hm^2$ (c) 10 000 $cm^2$ (d) 1 $dam^2$

6.5.4 25 Change 14 milliliters to liters:

(a) 14 L (b) 1.4 L (c) 0.14 L (d) 0.014 L

26 A small gram scale indicates that your pen has a mass of 18 grams; this may be expressed as:

(a) 0.180 kg (b) 0.018 kg (c) 1.800 kg (d) 18.00 kg

6.5.5 27 Find the missing term in 2.2 m times 11 m = _____:

(a) 24.2 m (b) 2.42 m (c) 0.242 m (d) 24.2 $m^2$

28 A rectangle is 1.2 m long and 4 m wide. Its area is:

(a) 1.6 $m^2$ (b) 48 $m^2$ (c) 4.8 $hm^2$ (d) 4.8 $m^2$

6.6.1 29 Find the area of a paralellogram with base = 32 m and height 12 m:

(a) 384 $m^2$ (b) 38.4 $m^2$ (c) 4.4 $m^2$ (d) 3.84 $m^2$

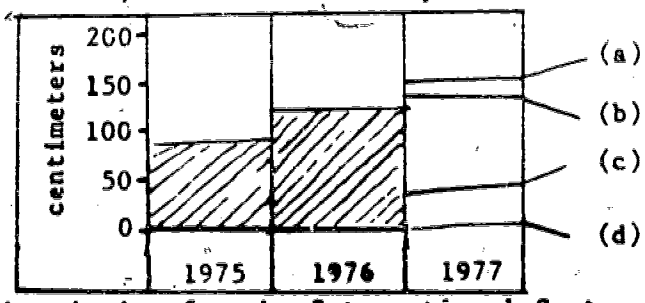
30 Find the area of a triangle that has base 32 m and height 6 m:

(a) 192 $m^2$ (b) 44 $m^2$ (c) 96 $m^2$ (d) 38 $m^2$

6.6.2 31 In making a bar graph, Ellen lets 1 cm represent 5 000 000 metric tons of wheat. What length bar will she need to represent 35 million tons of wheat?

(a) 35 m (b) 35 cm (c) 3.5 cm (d) 7 cm

32 The graph shows Mary's height for the last 3 years. If her height is 140 cm now, the bar for this year should end at:




6.7.1 33 The abbreviation for the International System of Units is:

(a) ISU (b) SU (c) SI (d) MS

34 The metric system was first used legally in the United States in:

(a) 1795 (b) 1830 (c) 1866 (d) 1965

6.8.1 35 A cubic decimeter is equal to:

(a) a liter (b) a meter (c) 10 decimeters (d) none of these

36 Choose the statement that is true in the metric system:

(a) Meters may be changed to decimeters by multiplying by 12.
(b) The measure "3 meters, 2 cm" can be combined into 3.02 m.
(c) Metric root words are all four-letter words.
(d) A cubic centimeter is exactly equal in volume to one liter.

6.9.1 37 In Italy, you would expect to buy sugar by the:

(a) pint (b) liter (c) pound (d) kilogram

38 Road maps of France, England and Japan will show distances in:

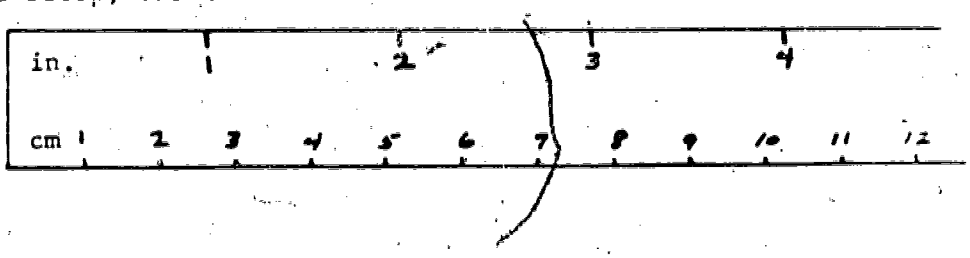
(a) miles (b) kilograms (c) kilometers (d) Herzogs

6.0.1 39 Six yards is almost as much as:

(a) 6 liters (b) 6 meters (c) 6000 grams (d) 6 kilograms

40 On the scale below, two inches is about the same as:

(a) 2 cm
(b) 5 cm
(c) 10 cm
(d) 12 cm



LEVEL 7/8-A - METRIC PROJECT TEST (page one)

7/8.1.1 1 The prefix centi comes from a Latin word meaning:

(a) cents (b) centigrade (c) a hundred parts (d) centipede

2 The preferred U.S. spelling for the word that matches the symbol "m" is:

(a) meter (b) metro (c) metre (d) metr

7/8.1.2 3 The base unit of volume in the metric system is:

(a) meter (b) liter (c) gram (d) cubic meter

4 Choose the measure that is associated with the word Celsius:

(a) length (b) temperature (c) force (d) angle measure

7/8.1.3 5 Which of the following is the largest unit?

(a) millimeter (b) dekameter (c) centimeter (d) decimeter

6 Mark the set that is in order from largest to smallest:

(a) kilo, deka, hecto
(b) milli, centi, deka
(c) kilo, deci, milli
(d) centi, milli, deci

7/8.1.4 7 Mark the temperature in degrees Celsius that you would want for a beach picnic:

(a) -10 (b) 10 (c) 20 (d) 30

8 Mark the temperature in degrees Celsius that would be considered a fever temperature for the average person.

(a) 37°C (b) 35°C (c) 20°C (d) 40°C

7/8.1.5 9 The correct symbol for square meter is:

(a) $m^2$ (b) sq. m. (c) sq m (d) $m^3$

10 Choose the one that is correct in symbol and form:

(a) 15 200 kgs (b) 15 200 kg. (c) 15,200 kg (d) 15 200 kg

7/8.2.1 11 To say "one-thousandth of a gram", use the symbol:

(a) kg (b) hg (c) g (d) mg

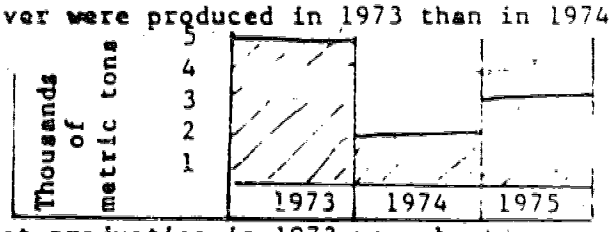
12 When you want to say "ten times a liter", the symbol to use is:

(a) kL (b) mL (c) daL (d) dL

LEVEL 7/8-A - METRIC PROJECT TEST (page two)

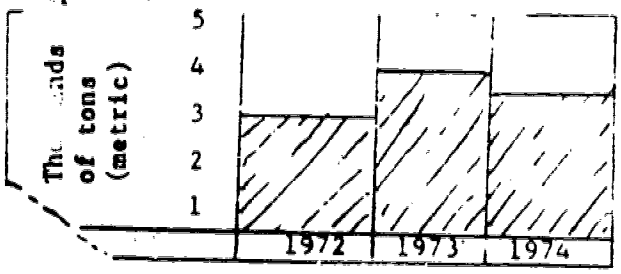
7/8.2.2 13 How many more tons of silver were produced in 1973 than in 1974?

(a) 3000
(b) 3
(c) 2000
(d) 5000




14 Using the graph below, wheat production in 1973 was about:

(a) 4 tons
(b) 500 tons
(c) 4000 tons
(d) 450 tons




7/8.2.3 15 2.5 liters is equal to:

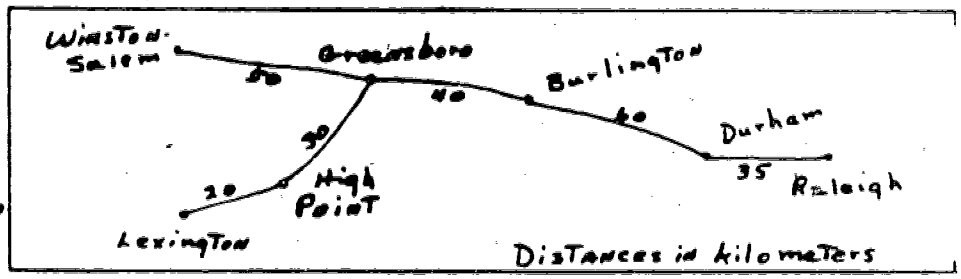
(a) 250 mL (b) 25 kL (c) 2500 mL (d) 0.125 L

16 Thirty meters is equal to:

(a) 30 cm (b) 300 km (c) 3000 cm (d) 3000 dm

7/8.2.4 17 Using the map below, the distance from Lexington to High Point is:

(a) 20 m
(b) 20 cm
(c) 20 mm
(d) 20 km




18 Using the map above, the distance from Winston-Salem to Durham is:

(a) 150 km (b) 15 km (c) 50 km (d) 100 km

7/8.3.1 19 Which measurement is nearest one kilometer:

(a) 1001 m (b) 1.001 km (c) 1 000 001 mm (d) 100 100 cm

20 Choose the largest measure:

(a) 2,040 kg (b) 420 g (c) 4020 mg (d) 0.042 t

7/8.3. 21 The height of a ceiling in a home is about:

(a) 2.5 m (b) 3.5 cm (c) 4.5 dm (d) 4.0 km

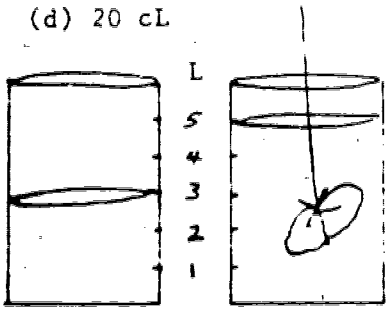
22 A softball throw half the length of a football field is about:

(a) 45 m (b) 50 m (c) 60 m (d) 30 m

7/8.4.1 23 Which measure is the same amount as 20 $cm^3$?

(a) 20 L (b) 20 mL (c) 20 dL (d) 20 cL

24 The pictures show a beaker of water before and after lowering a rock into it. Estimate the size of the rock:



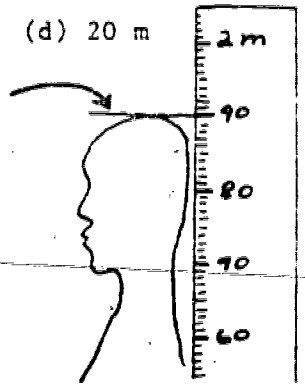

(a) 3 $dm^3$ (c) 4 $dm^3$

(b) 2 $dm^3$ (d) 5 $dm^3$

7/8.4.2 25 I am a center for the Denver Nuggets. My height is about:

(a) 2.0 m (b) 200 mm (c) 2000 cm (d) 20 m

26 A student is checking his height; it is:




(a) 1.9 m

(b) 90 cm

(c) 0.9 m

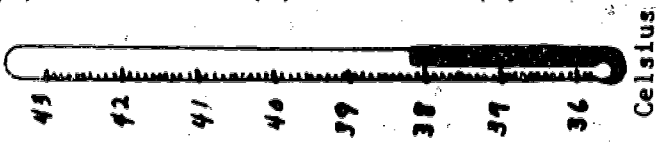
(d) 9 m

7/8.4.3 27 Mark the temperature that is considered normal body temperature:

(a) 39°C (b) 27°C (c) 37°C (d) 98.6°C

28 Jane has just taken her temperature with a fever thermometer. Her reading is:

(a) 39.8°C (b) 38°C (c) 35°C (d) 38.2°C




7/8.4.4 29 Jerry placed a lab thermometer in a cup of crushed ice. The temperature was nearest:

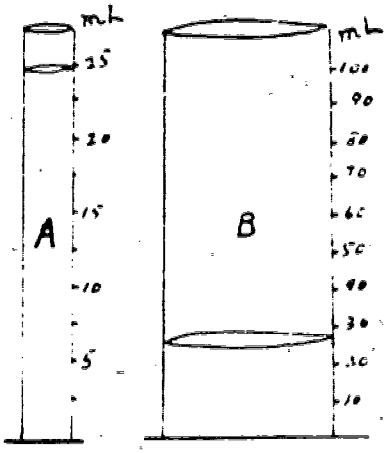
(a) 0°C (b) -10°C (c) 10°C (d) 100°C

30 In a laboratory experiment, a student measured a temperature change from 35.5°C to 48.0°C in a sample of water. The number of degrees change on the Celsius scale was:

(a) 3.5 (b) 6.5 (c) 12.5 (d) 90.5

7/8.4.5 31 The liquid in Cylinder A measures about:

(a) 25 mL
(b) 20 mL
(c) 15
(d) none of these




32 A student measured the volumes of two liquids with graduated cylinders A and B. He found:

(a) greater volume of liquid in A.
(b) greater volume of liquid in B.
(c) the volumes were the same.
(d) none of the above.

7/8.4.6 33 A rock exactly balances 1100 one-gram cubes. The weight of the rock is:

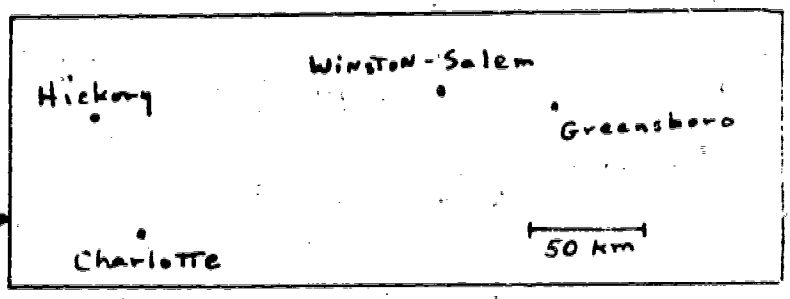
(a) 1.1 kg (b) 11 000 g (c) 110 g (d) none of these

34 A student weighed a peanut for a calorie experiment before and after burning it to measure the heat produced. The beginning weight of the nut was 0.75 g and the weight of the burned nut (the ash) was 0.20 g. What was the weight difference?

(a) 0.2 g (b) 0.5 g (c) 0.55 g (d) 0.95 g

7/8.5.1 35 From Winston-Salem, the distance to Chicago is about 1125 km and to Boston about 1175 km. The difference is about:

(a) 50 m
(b) 500 km
(c) 5 km
(d) 50 km




36 From Winston-Salem to Charlotte is about:

(a) 50 km (b) 150 km (c) 100 km (d) 90 km

7/8.5.2 37 To change a measurement from millimeters to meters you will change the decimal

(a) 3 places left (b) 1 place right (c) 2 places left (d) 3 places right

38 4253 cm = _____

(a) 0.4253 hm (b) 425.3 hm (c) 42.53 hm (d) 4.253 hm

7/8.6.1 39 Using the formula $K = 273 + C$, find K when C = 481.6:

(a) 508.9 (b) 5546 (c) 5089 (d) 754.6

40 Using the formula X = 3Y, find X when Y = 1.2 m

(a) 36 m (b) 1.5 m (c) 4.2 m (d) 3.6 m

7/8.6.2 41 Using metric measures for an art project, a student chose paper:

(a) 30 cm by 40 cm
(b) 30 m by 40 m
(c) 30 km by 40 km
(d) 30 mm by 40 mm

42 In the future, a person is most <u>unlikely</u> to need metric measurement when:

(a) running in a track meet (b) following a recipe
(c) working for an industry (d) singing in a chorus

7/8.7.1 43 Which word best describes America's plan for "going metric"?

(a) mandatory (b) immediate (c) voluntary (d) detailed

44 Which expression best describes John Quincy Adams?

(a) Loved French toast.
(b) Invented the metric system.
(c) Recommended that the U.S. not go metric until England and Spain did.
(d) Recommended that the U.S. go metric in 1976.

7/8.8.1 45 In the words millimeter, milliliter, and milligram, milli always means:

(a) 0.001 (b) 0.01 (c) 0.1 (d) 1

46 Choose the best statement for comparing the metric system to our customary units:

(a) All metric units are larger than our customary units.
(b) All metric units are harder to spell than our customary units.
(c) Metric prefixes show the size of the unit; customary units do not have uniform prefixes.
(d) Length, volume and weight are more easily related in our customary units.

7/8.9.1 47 In Lithuania you could expect to buy gasoline by the:

(a) gallon (b) liter (c) kilo (d) milliliter

48 Your old American-made car has a problem. You might borrow some tools from a friend if his new car was made in:

(a) Italy (b) Germany (c) Japan (d) none of these

7/8.9.2 49 The European Common Market wants everyone to use:

(a) the metric system
(b) the English system
(c) the American customary system
(d) the data system

50 Advantages of using the metric system:

(a) It is simpler. (b) Trade is easier.
(c) Everyone uses the same system of measure. (d) All of these.

7/8 9.3 51 Producing American goods in metric sizes will make it:

(a) Harder to sell them abroad
(b) Easier to sell them abroad
(c) No difference
(d) None of the above

52 When all countries use the metric system, it will be easier to control:

(a) drug abuse (b) air pollution (c) alcoholism (d) gambling

7/8.0.1 53 Choose the more sensible measure for a coffee cup.

(a) 2500 mL (b) 250 mL (c) 25 mL (d) 2.5 mL

54 Using the equation "1 inch = 2.54 cm", find the measure in cm of 7 inches:

(a) 17.78 cm (b) 0.36 cm (c) 12.61 cm (d) 2.47 cm