Student Name:_____ Date:_____

Introduction to Graphics & Design

Page Layout: Basic Math & Measurement for Graphic Communications

GPS: ACCT-IGD-8, ACCT-IGD-11, ACCT-IGD-12

Objective: Given a worksheet and sample problems, complete the basic math and measurement worksheet. Score an 80% or higher.

Measurement: Understanding the Ruler

Answer each question in the blank to the left.

_____ 1. How many 1/2s are in an inch?

_____ 2. How many 1/4s are in an inch?

_____ 3. How many 1/8s are in an inch?

_____ 4. How many 1/16s are in an inch?

_____ 5. How many 1/16s are in 1/8 inch?

_____ 6. How many 1/16s are in 1/4 inch?

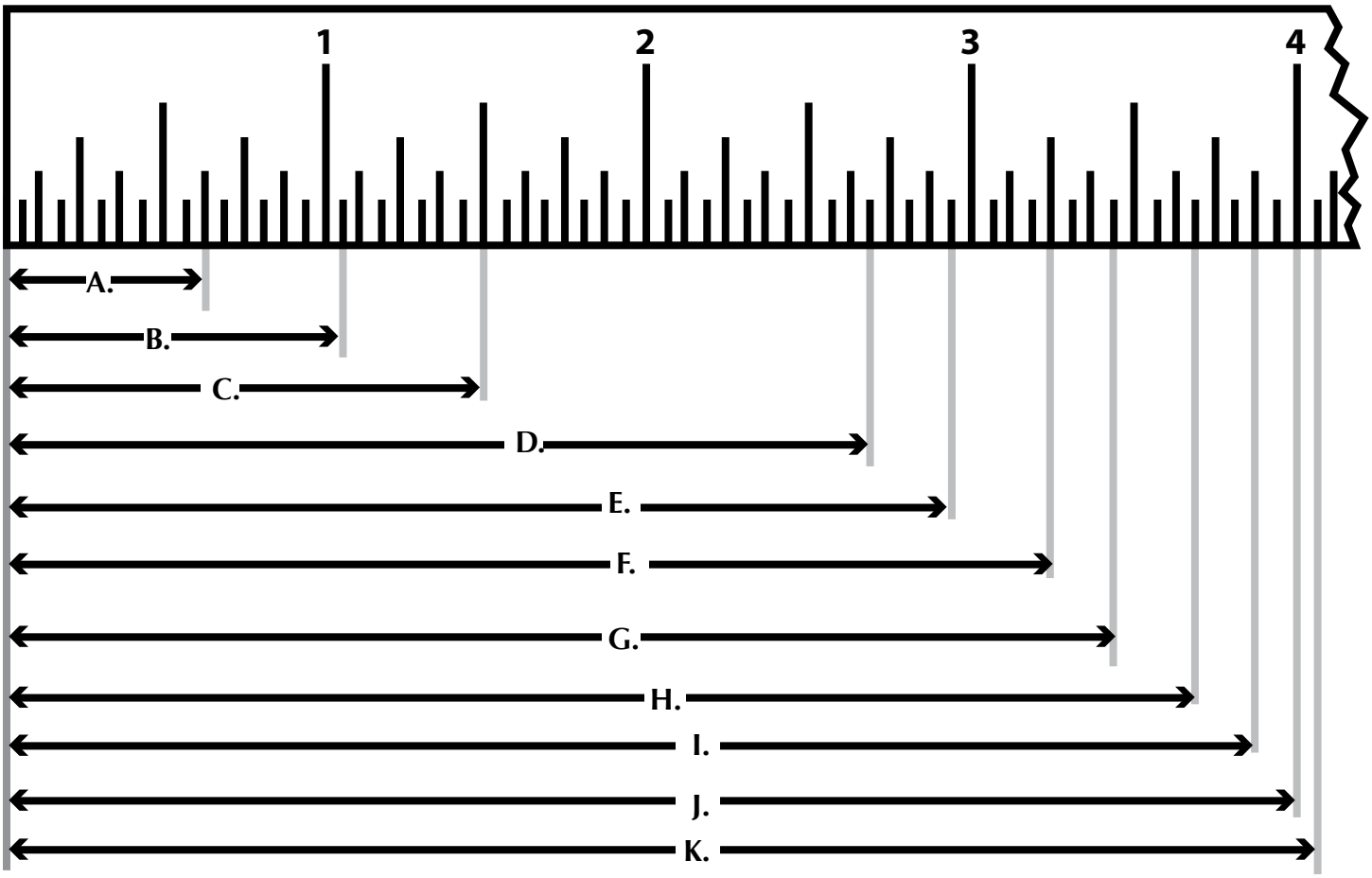
_____ 7. How many 1/8 are in 1/2 inch?

_____ 8. How many 1/16s are in 3/4 inch?

_____ 9. How many 1/16s are in 7/8 inch?

Measurement: Reading the Ruler

Give the scale reading indicated for each problem below. Record each dimension in inches.



A._____

B._____

C._____

D._____

E._____

F._____

G._____

H._____

I._____

J._____

K._____

Measurement: Measuring

Measure the following line segments to the nearest fraction of an inch. Write your answers in the blanks to the left of the number.

_____ 1.

_____ 2.

_____ 3.

_____ 4.

_____ 5.

_____ 6.

_____ 7.

_____ 8.

_____ 9.

_____ 10.

Fractions: Addition & Subtraction

Add or subtract the following fraction problems.

1. $\frac{2}{3} + \frac{1}{2}$

2. $\frac{3}{4} + \frac{1}{4}$

3. $6\frac{1}{8} + \frac{1}{16}$

4. $\frac{1}{8} - \frac{1}{16}$

5. $\frac{3}{4} - \frac{1}{4}$

6. $5\frac{15}{16} - 2\frac{3}{4}$

Fractions & Decimals

Complete the following practice. Show your work!

1. 3/4” as a decimal?
2. 1/8” as a decimal?
3. 1/16” as a decimal?
4. 1 3/4” as a decimal?
5. 1125% as a decimal?
6. .65 as a percent?
7. 1.75 as a percent?
8. 5% as a decimal?
9. 85% as a decimal?
10. 15% as a decimal?

Reproduction: Enlargements & Reductions

Complete the following practice. Show your work!

1. 8.5” object sized to 4.25”= _____
2. 1 1/2” object sized to 4”= _____
3. 3” object sized to 5.5= _____
4. 2.25” object sized to 3/4”= _____

Reproduction: Enlargements & Reductions (where size & percentage are known)

Complete the following practice. Show your work!

1. a 12” original sized at 75%, the new size= _____
2. a 4 1/4” original sized @ 135%, the new size= _____
3. a 5.75” original sized at 160%, the new size =_____
4. a 4.125” original sized at 105%, the new size= _____

Reproduction: Enlargements & Reductions: Using both the formulas

Complete the following practice. Show your work!

1. 8 1/2" x 11" original sized so that 8 1/2" = 3.75"

   A. What % is needed?

   B. What is the new size for 11?

2. An 8" x 10" object is to be shot so that 8 = 6 and 10 = 7.

   A. What percentages are needed, and which % is used to insure that the art will fit within the box?

Type Measurements

Complete the following practice. Show your work!

1. 2" = _____points

2. 3"= _____pica

3. 33 pica = _____inches

4. 504 points= _____inches

5. 144 points x 252 points converts =_____ inches x_____inches

Liquid Measurement 1

Complete the following practice. Show your work!

1. The photo processor has a developer tank that is marked in liters. The capacity of the tank is 25 liters. How many 2 1/2 gallon containers of developer can we pour in without the tank overflowing?

   _____

2. There are 13 liters of liquid in a container. How much is left if 2 gallons are taken out?

   _____

Liquid Measurement 2

Complete the statements in the following liquid and weight measurement problems

1. There are 2 cups to a pint and a 1/2 pint is a _____.

2. A quart contains _____pints and a pint is a 1/2 qt.

3. In a gallon there are 4 quarts or _____pints.

4. If there are _____ quarts to a gallon and 8 pints to a gallon there must be _____ cups to a gallon.

Estimating

Complete the following practice. Show your work!

1. A printer estimates that running a small press costs $25 per hour. The total cost of a job that took 1 1/2 hours of press time is $650. How much of the cost of this job is unrelated to press time?

2. A printer estimates that each page of a booklet costs $22.50 to produce. How much will a 64-page booklet cost to produce?

3. A carton of 60 pound paper costs $120 and it contains 1500 sheets of 23” x 35” paper. Four sheets of 11”17” paper can be cut from a 23” x 35” sheet. What will be the paper cost of a job that contains five hundred 11” x 17” sheets?