

Math

Placement Test

8th & 9th Grades (Units 61-96)



Please Return Completed Tests to:

Bridgeway Academy

334 Second Street

Catasauqua, PA 18032

Phone: 610-266-9016

Email: info@bridgewayacademy.com

No Calculators are to be used for any part of this placement test and please show all work.

If working out problems on separate paper, return all papers to Bridgeway along with the placement test.

Placement Test Instructions and Results

Math 8th & 9th

Student Name: _____

Birth date: _____ Age: _____ Grade Level: _____

Testing date: _____

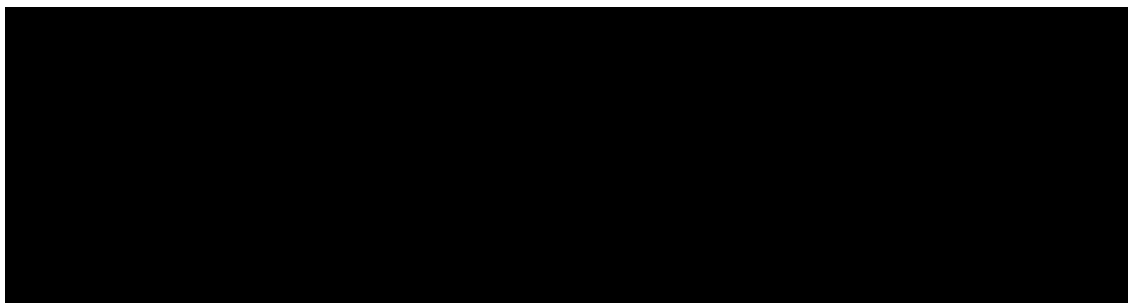
Where to begin:

Please begin with the first unit of this test and continue until the student scores below minimum score on 3 consecutive units . Be sure to look beyond units where the student stops to ensure that there is nothing more he or she can complete.

Scoring:

Please use the answer sheet to score your student's test and circle, on the chart below, the numbers of any units where the student scored below the minimum score.

Place a / over the number where the student stopped.



61	62	63	64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81	82	83	84
85	86	87	88	89	90	91	92	93	94	95	96

Units prescribed for student: _____

(Office Use Only)

Remember:

► No calculators! Be sure to show your work on the test or a separate sheet of paper.

Solve these problems.

(1)

$$\begin{array}{r} 27,482 \\ + 63,647 \\ \hline \end{array}$$

(2)

$$\begin{array}{r} 9,537 \\ + 1,477 \\ \hline \end{array}$$

(3)

$$\begin{array}{r} 8,015 \\ - 5,578 \\ \hline \end{array}$$

(4)

$$\begin{array}{r} 403 \\ \times 416 \\ \hline \end{array}$$

(5)

$$\begin{array}{r} 219 \\ \times 505 \\ \hline \end{array}$$

(6)

$$\begin{array}{r} 831 \\ \times 620 \\ \hline \end{array}$$

(7)

$$9 \overline{) 379}$$

(8)

$$6 \overline{) 444}$$

Unit # 61
Mastery Score 8
Minimum Score 6
Score _____

Continue to the next page

Add or subtract.

Write your answers in simplest form.

$$\begin{array}{r} (1) \quad 17 \frac{10}{15} \\ + \quad 13 \frac{11}{15} \\ \hline \end{array}$$

$$\begin{array}{r} (2) \quad 24 \frac{8}{10} \\ + \quad 56 \frac{7}{10} \\ \hline \end{array}$$

$$\begin{array}{r} (3) \quad 9 \frac{11}{12} \\ - \quad 6 \frac{7}{12} \\ \hline \end{array}$$

$$\begin{array}{r} (4) \quad 45 \frac{18}{27} \\ - \quad 25 \frac{9}{27} \\ \hline \end{array}$$

Multiply or Divide. (some may have remainders)

$$\begin{array}{r} (5) \quad 7,878 \\ \times \quad 245 \\ \hline \end{array}$$

$$(6) \quad 36 \overline{)3,481}$$

Unit # 62 Mastery Score 6 Minimum Score 5 Score _____

Divide.

Write the correct comparison symbol ($>$, $<$, $=$) on each blank.

$$(1) \quad 85 \overline{)21,598}$$

$$(2) \quad 8.613 \quad \underline{\hspace{1cm}} \quad 8.631$$

$$(3) \quad 3.4 \quad \underline{\hspace{1cm}} \quad 3.400$$

Add or subtract these mixed numbers with *like* or *unlike* fractions. Borrow when necessary. Write your answers in simplest form.

$$\begin{array}{r} (4) \quad 4 \frac{3}{8} \\ + \quad 4 \frac{4}{16} \\ \hline \end{array}$$

$$\begin{array}{r} (5) \quad 8 \frac{1}{3} \\ - \quad 1 \frac{7}{12} \\ \hline \end{array}$$

$$\begin{array}{r} (6) \quad 12 \frac{5}{10} \\ + \quad 6 \frac{3}{10} \\ \hline \end{array}$$

Unit # 63 Mastery Score 6 Minimum Score 5 Score _____

Add or subtract.

$$(1) \quad 5.37 - 1.3642 = \underline{\hspace{2cm}}$$

$$(2) \quad 243.46 + 16.551 = \underline{\hspace{2cm}}$$

Add or subtract.

(3) $0.94 - 0.7623 =$ _____ (4) $5.38 + 2.6402 =$ _____

Write a decimal equal to each fraction or mixed number.

(5) $7 \frac{35}{1,000} =$ _____ (6) $11 \frac{83}{10,000} =$ _____

Multiply these problems using cancellation. Write your answers in simplest form.

(7) $\frac{9}{16} \times \frac{4}{9} =$ _____ (8) $\frac{8}{21} \times \frac{7}{12} =$ _____

Unit # 64 Mastery Score 8 Minimum Score 5 Score _____

Write each in standard notation.

(1) $3 \times 10^4 =$ _____ (2) $5 \times 10^6 =$ _____

Write each by using exponents.

(3) $400,000 =$ _____ (4) $60,000,000 =$ _____

Compare these whole numbers by writing the correct comparison symbol (>, <, =).

(5) $1,926,014$ _____ $1,920,614$ (6) $31,180,656$ _____ $3,180,656$

Write these numbers in columns; then multiply.

(7) $32 \times 0.217 =$ _____ (8) $2.5 \times 2.5 =$ _____

Unit # 65 Mastery Score 8 Minimum Score 5 Score _____

Follow the order of operations, and evaluate these expressions.

(1) $7 + 3 \times 2 =$ _____ (2) $48 \div 6 + 2(4) =$ _____

Round these numbers to the place of greatest value.

(3) 492,360,700 _____ (4) 74,436 _____

Write these numbers in columns; then multiply.

(5) $0.8 \times 0.43 =$ _____ (5) $406 \times 5.15 =$ _____

Unit # 66 Mastery Score 6 Minimum Score 5 Score _____

Use inverse operations to solve for the missing number in these addition and subtraction equations. Then check your answers.

(1) $n - 45 = 95$ (2) $79 + n = 110$ (3) $n - 36 = 14$

$n =$ _____

$n =$ _____

$n =$ _____

Divide. Your answers need to be in simplest form.

(4) $\frac{3}{4} \div 9 =$ _____ (5) $12 \div 2\frac{2}{9} =$ _____ (6) $\frac{12}{13} \div 18 =$ _____

Divide.

(7) $20 \overline{)656.20}$

(8) $36 \overline{)71.28}$

Unit # 67 Mastery Score 8 Minimum Score 6 Score _____

Use inverse operations to solve for the missing number in these multiplication and division equations. Then check your answers.

(1) $n \times 76 = 2,204$

(2) $52 \times n = 1,664$

(3) $n \div 42 = 12$

$n =$ _____

$n =$ _____

$n =$ _____

Divide. Express any remainders as decimals.

(4) $0.026 \overline{)14.56}$

(5) $48 \overline{)49.2}$

Unit # 68 Mastery Score 5 Minimum Score 4 Score _____

Use the order of operations to evaluate these expressions.

(1) $4 + 9 \times 3$ _____

(2) $3 \times (7 + 6)$ _____

(3) $30 - 20 \div 5$ _____

Solve for the missing number in each proportion.

(4) $\frac{2}{12} = \frac{6}{n}$

(5) $\frac{4}{3} = \frac{16}{n}$

Write the equivalent *percent* for each fraction.

(6) $\frac{13}{50} = \underline{\hspace{2cm}}$ (7) $\frac{5}{8} = \underline{\hspace{2cm}}$

Unit # 69
Mastery Score 7
Minimum Score 5
Score

Change these fractions to *terminating* or *repeating* decimals. When possible, write the fraction in simplest form before you divide.

(1) $\frac{5}{9} = \underline{\hspace{2cm}}$ (2) $\frac{3}{8} = \underline{\hspace{2cm}}$ (3) $\frac{11}{15} = \underline{\hspace{2cm}}$

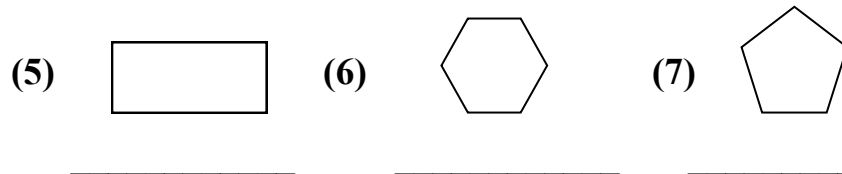
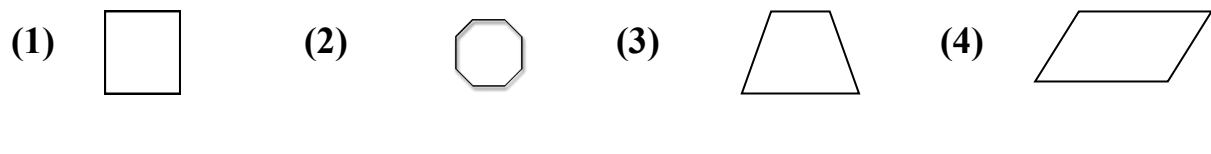
Write the decimal equivalents for these mixed numbers.

(4) $10\frac{4}{5} = \underline{\hspace{2cm}}$ (5) $4\frac{3}{10} = \underline{\hspace{2cm}}$

(6) $11\frac{1}{2} = \underline{\hspace{2cm}}$

Unit # 70
Mastery Score 6
Minimum Score 5
Score

Write the name of the polygon. If the polygon is a quadrilateral, write the name of the quadrilateral.



Unit # 71
Mastery Score 7
Minimum Score 5
Score

Remember:

▶ No calculators! Be sure to show your work on the test or a separate sheet of paper.

Identify each solid figure by its shape and/or description.

- (1) A figure with six congruent square faces. _____
- (2) A figure with two parallel congruent bases that are circles. _____
- (3) A figure with two parallel congruent bases that are rectangles. _____
- (4) A figure with four faces that are triangles. _____

Write S if a solid figure is being described, or write P if a plane figure is being described.

- (5) A figure that lies on one plane. _____
- (6) A figure with more than one surface. _____
- (7) A two-dimensional figure. _____
- (8) A figure that has volume. _____

Unit # 72
Mastery Score 8
Minimum Score 6
Score _____

Write the number.

- (1) Nine hundred billion four hundred thousand eight. _____

Write this number in words on the lines below.

- (2) 40,052,618,012.

Unit # 73
Mastery Score 2
Minimum Score 1
Score _____

Round decimal to the nearest 10th, 100th and 1000th.

	10th	100th	1000th
2.1338	(1)	(2)	(3)
.5506	(4)	(5)	(6)

Circle the larger fraction.

(7) $\frac{2}{3}$ or $\frac{3}{4}$

(8) $\frac{2}{5}$ or $\frac{3}{7}$

Unit # 74

Mastery Score 8

Minimum Score 6

Score _____

Change these percents to fractions.

(1) 75% = _____ (2) 16% = _____ (3) 90% = _____

Change these fractions to percents.

(4) $\frac{1}{5}$ = _____

(5) $\frac{7}{10}$ = _____

Solve these problems.

(6) 15% of 75 = _____

(7) 50 is _____% of 125

(8) 25% of 144 = _____

(9) 300 is _____% of 240

Change decimals to percent.

(10) .70 = _____

(11) .40 = _____

Unit # 75

Mastery Score 11

Minimum Score 9

Score _____

Give the correct answers.

A box contains 20 candles. 5 are red, 4 are yellow, 6 are green, 3 are black, and 2 are orange.

(1) What is the sample space? _____

(2) What is the probability of picking an orange candle? $P(o)$ _____

(3) Putting the first selection aside, what is the probability of picking another orange candle? $P(o)$ _____

(4) What is the probability of picking a red candle? $P(r)$ _____

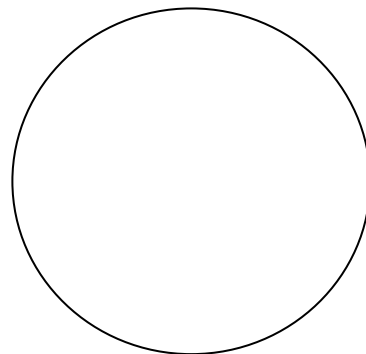
Complete the table.

Roman	Hindu-Arabic
MCCXVIII	(5)
(6)	10,260
CMXII	(7)

8) Plot the circle graph

There are 16 puppies in a pet store.

- 9 of the puppies are black
- 4 of the puppies are brown
- 2 of the puppies are white
- 1 of the puppies is gray



Complete the circle graph using this data.

Unit # 76 Mastery Score 8 Minimum Score 5 Score _____

**Find the commission and net proceeds.
Round the commission to the nearest cent.**

		Decimal Equivalent	Commission	Net Proceeds
\$22,350.00	5%	(1) _____	(2) _____	(3) _____

**Find the profit or loss and the rate of profit or loss.
Round to the nearest 10th of a percent.**

Cost	Overhead	Price	Selling Loss	Profit Percent
\$185.00	\$60.00	\$200.00	(4) _____	(5) _____

Find the discount and net price. Compute to the nearest cent.

Marked price	Rate of Discounts	First Discount	Second Discount	Net Price
\$3,000.00	30%	15%	(6) _____	(7) _____ (8) _____

<p>Unit # 77 Mastery Score 8 Minimum Score 6 Score _____</p>

Change the w.h. to KWH

(1) 22,100 w.h. = _____ KWH

(2) 400 w.h. = _____ KWH

<p>Unit # 78 Mastery Score 2 Minimum Score 1 Score _____</p>

Find the interest.

Principal	Rate	Time	Interest
(1) \$900.00	8 ½ %	2 years	_____
(2) \$450.00	9%	1 ½ years	_____

Find the interest and total amount to be repaid.

Principal	Rate	Time	Interest	Total Repaid
(3, 4) \$2,000.00	18%	1 year	_____	_____
(5, 6) \$800.00	12%	14 months	_____	_____

Give the correct change in coins.

Cost	Cash given	1	5	10	25
(7-10) \$32.79	\$33.09				

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Unit # 79
 Mastery Score 10
 Minimum Score 8
 Score _____

Give the correct answer.

- (1) 7,500 grams = _____ kilograms (2) 350 meters = _____ centimeters
- (3) 5.5 yards = _____ rods (4) 1 kilometer = _____ meters
- (5) The weight of a newborn lamb is given as 9 lb 3 oz.
 What is his weight in ounces? _____.

Change °C to °F and °F to °C.

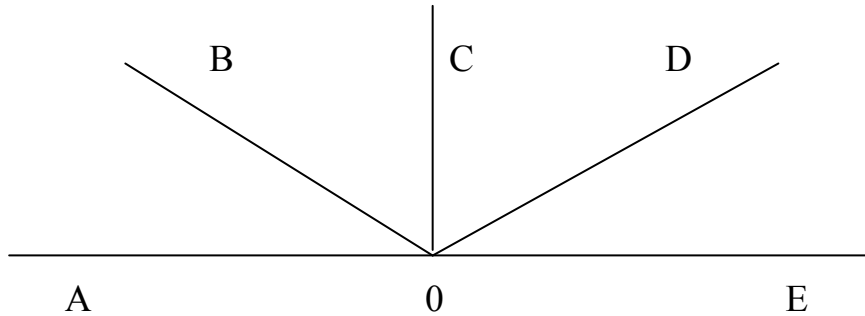
- (6) 45 °C = _____ °F
- (7) 212 °F = _____ °C

Unit # 80
 Mastery Score 7
 Minimum Score 5
 Score _____

Write the answer.

(1) A line is how long? _____

(2) An angle measuring more than 90 degrees is called a _____



(3) Name two acute angles. _____

(4) Name an angle supplementary to $\angle AOB$ _____

Add and subtract these angle measures.

$$\begin{array}{r} (5) \quad 25^\circ \quad 14' \quad 55'' \\ + 25^\circ \quad 18' \quad 20'' \\ \hline \end{array}$$

$$\begin{array}{r} (6) \quad 112^\circ \quad 39' \quad 41'' \\ - 80^\circ \quad 42' \quad 57'' \\ \hline \end{array}$$

Unit # 81 Mastery Score 6 Minimum Score 5 Score _____

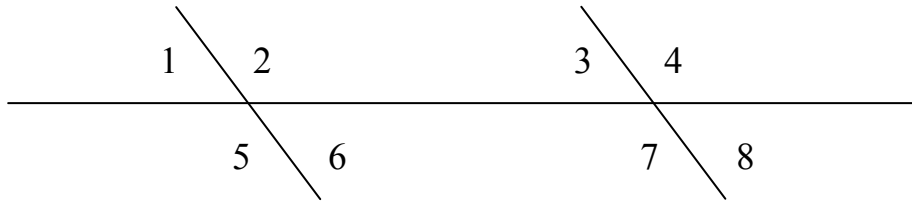
Solve the following.

The measures of two angles of a triangle are given below. Calculate the measure of the third angle and determine whether the triangle is a right, obtuse, or acute triangle.

$$120^\circ \quad \& \quad 30^\circ \quad = \quad (1) \underline{\hspace{2cm}} \quad (2) \underline{\hspace{2cm}}$$

$$30^\circ \quad \& \quad 90^\circ \quad = \quad (3) \underline{\hspace{2cm}} \quad (4) \underline{\hspace{2cm}}$$

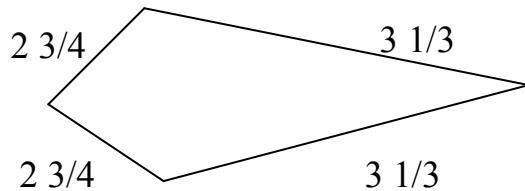
List the corresponding angle to the angle given.



(5) $\angle 5$ and _____

(6) $\angle 3$ and _____

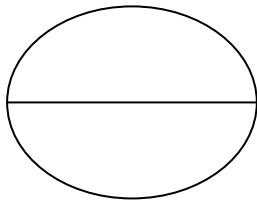
Calculate the perimeter.



(7) $P =$ _____

Unit # 82
 Mastery Score 7
 Minimum Score 5
 Score _____

Find the circumference and area of the following circle.



Diameter = 14

(1) $C =$ _____ units

(2) $A =$ _____ sq. Units

Find the surface area and volume of the following figure.



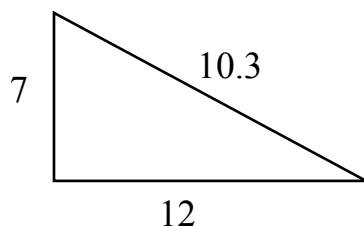
(3) $SA =$ _____ sq. units

(4) $V =$ _____ cubic units

Find the perimeter and area.

(5) $P =$ _____ units

(6) $A =$ _____ sq. units



Unit # 83
Mastery Score 6
Minimum Score 4
Score _____

Write the correct answer.

(1) A variable is an _____ in an equation.

(2) A set containing elements that can be counted is called a _____.

(3) Any collection of objects is called a _____.

Write the correct symbol

(\in , \notin , $=$, \neq , \emptyset , \subset , $\not\subset$).

(4) {the whole #s } _____ {the even whole #s }

(5) 7 _____ {2,4,8,9}

(6) 3 _____ {1,2,3,4}

Solve the following equations.

(7) $d - 581 = 647$ $d =$ _____

(8) $89 + x = 192$ $x =$ _____

Unit # 84
Mastery Score 8
Minimum Score 6
Score _____

Use the rate formula to solve these problems.

Rate	Time	Distance traveled
(1) 50 mi/hr	5 hours	_____
(2) 15 mi/hr	3 hours	_____
(3) 75 mi/hr	2 hours	_____
(4) 1,484 mi/sec	312 seconds	_____

Unit # 85
Mastery Score 4
Minimum Score 3
Score _____

Solve the following problems.

(1) $12x - 17 = 28$ $x =$ _____

(2) $1/5 x + 25 = 50$ $x =$ _____

(3) $12x + 24 = 97 + 8x$ $x =$ _____

(4) $x - 17 = 21$ $x =$ _____

(5) $x + 2 \frac{1}{4} = 8 \frac{1}{3}$ $x =$ _____

(6) $29x = 330 - x$ $x =$ _____

Unit # 86 Mastery Score 6 Minimum Score 4 Score _____

Write the equations and solve.

The difference between a number and fifteen is six.

(1) _____ (2) $x =$ _____

Three times a number plus eighteen equals sixty.

(3) _____ (4) $x =$ _____

Change the subject of these formulas to the subject indicated.

$v = lwh$ (5) $w =$ _____

$c = (\pi) d$ (6) $d =$ _____

$A = lw$ (7) $l =$ _____ (8) $w =$ _____

Unit # 87 Mastery Score 8 Minimum Score 5 Score _____

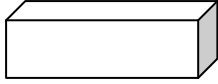
Write the correct formula.

(1) Formula for calculating the area of a triangle. _____

(2) Formula for calculating the volume of a triangle. _____

(3) Formula for calculating the volume of a sphere. _____

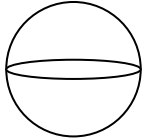
Name the following prisms.



(4) _____



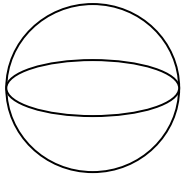
(5) _____



(6) _____

Calculate the volume of the following problems.

What is the volume of the following sphere?



Diameter = 16 (7) _____ cubic units.

What is the volume of a rectangular prism 100 units long, 50 units wide and 200 units high?

(8) _____ cubic units.

Unit # 88 Mastery Score 8 Minimum Score 5 Score _____

Calculate the prime factors of the following numbers.

26 (1) _____

84 (2) _____

63 (3) _____

Find the Lowest Common Denominator.

(4) $\frac{3}{4}$, $\frac{5}{7}$ _____ LCD

(5) $\frac{3}{9}$, $\frac{14}{27}$ _____ LCD

(6) $\frac{7}{8}$, $\frac{16}{14}$ _____ LCD

(7) $\frac{7}{12}$, $\frac{4}{16}$ _____ LCD

Simplify.

(8) $15/18 =$ _____

Find the quotient.

(9) $2,516 \div 34 =$ _____

Find the product.

(10)
$$\begin{array}{r} 4.001 \\ \times .09 \\ \hline \end{array}$$

Unit # 89 Mastery Score 10 Minimum Score 7 Score _____
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Answer the following.

(1) $\sqrt{y^2} =$ _____ (2) $\sqrt{81} =$ _____ (3) $\sqrt{49} =$ _____

(4) $6^2 =$ _____ (5) $12^2 =$ _____

Use the Pythagorean theorem. ($C^2 = A^2 + B^2$)
Calculate c to 3 decimal places.

(6) $a = 7$
 $b = 4$
 $c =$ _____

(7) $a = 2$
 $b = 14$
 $c =$ _____

Answer the following.

(8) An angle of 90° is called a _____.

Unit # 90 Mastery Score 8 Minimum Score 6 Score _____

Solve the following.

- (1) What is the interest on \$325.00 at 5% for 4 years? _____
- (2) What is the interest on \$180.00 at 3% for 5 years? _____
- (3) What is the total amount to be repaid on a loan of \$87,640.00 at 5 ½ % for 25 years? _____
- (4) What is the interest on \$1,458.00 at 7 ¾ % for 2 years? _____

Calculate the compound interest earned.

Principal	Annual Interest Rate	Years	Compounded	Interest.
(5) \$1,000.00	8%	2	Semiannually	
(6) \$500.00	6%	1	Quarterly	
(7) \$1,200.00	5%	2	Semiannually	

Unit # 91
 Mastery Score 7
 Minimum Score 5
 Score _____

Solve the following problems.

Balance	Monthly Payment	Rate	Interest Payment	Principal Payment	Principal Balance
5,100.00	76.08	8%	(1)	(2)	(3)
14,000.00	212.98	7 1/2%	(4)	(5)	(6)

Find the current yield to the nearest .1%.

Consider all bonds as \$1,000.00 bonds.

- (7) J.C. Penny 5s 89 101 _____
- (8) Shell Oil 4 ½ s 92 102 ½ _____

Unit # 92
 Mastery Score 8
 Minimum Score 6
 Score _____

Show the tax rate as a percent.

- (1) 46.20 per \$1,000.00 _____
- (2) 187 mils per \$1.00 _____
- (3) 8.45 per \$100.00 _____

Find the Tax.

	Assessed Property Value	Tax Rate	Tax Due
(4)	\$15,720.00	\$4.00 per \$100.00	_____
(5)	\$18,200.00	\$3.60 per \$100.00	_____

Unit # 93
 Mastery Score 5
 Minimum Score 4
 Score _____

Calculate the monthly premiums multiplying by .089.

	Annual Premium	Premium
(1)	\$210.00	_____
(2)	\$140.00	_____
(3)	\$90.00	_____

Using the chart below, calculate the annual premiums.

Flood Insurance Rate per \$100.00 per year				
Town Class	Brick Homes		Frame Homes	
	House	Contents	House	Contents
1	.159	.224	.204	.271
2	.164	.231	.209	.277
3	.170	.238	.213	.281
4	.178	.244	.216	.285
5	.182	.251	.221	.290

Town Class	Type	House Insurance	Content Insurance	House Premium	Content Premium	Total
2	B	\$44,100.00	\$14,000.00	(4)	(5)	(6)
4	B	\$38,500.00	\$8,000.00	(7)	(8)	(9)
1	F	\$41,400.00	\$9,600.00	(10)	(11)	(12)

Unit # 94 Mastery Score 12 Minimum Score 10 Score _____

Write the correct definition.

- (1) deci _____
- (2) milli _____
- (3) deka _____
- (4) hecto _____

Write the correct answer. Round to 2 decimal places when necessary.

- (5) 48 oz = _____ ml
- (6) 12 lb = _____ kg
- (7) 2.5 m = _____ cm

Unit # 95 Mastery Score 7 Minimum Score 5 Score _____

Solve the following.

(1) $ \begin{array}{r} + 18.92 \\ - 22.33 \\ + 19.99 \\ + 16.85 \\ \hline \end{array} $	(2) $ \begin{array}{r} + 201.75 \\ - 412.19 \\ - 108.71 \\ + 189.98 \\ - 200.62 \\ \hline \end{array} $
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$$\begin{array}{r} (3) \quad + 2.449 \\ + 6.748 \\ \hline \end{array}$$

$$\begin{array}{r} (4) \quad - 2,662 \\ + 1,598 \\ \hline \end{array}$$

$$\begin{array}{r} (5) \quad + 1.483 \\ - .62 \\ + .08 \\ - 1.11 \\ \hline \end{array}$$

Write the correct symbol.

(6) -8 _____ -5

(7) -2 _____ 0

(8) $+3$ _____ $+2$

Write the number.

(9) negative twenty-six. _____

(10) negative twenty-eight hundredths. _____

Unit # 96 Mastery Score 10 Minimum Score 8 Score _____
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End of Math Diagnostic Units 61-96
