Math 10 – Unit 4 – 5.1 to 5.8; 9.4; 8.1 to 8.3
To the Test – be sure to bring:
   (1) your personally-prepared 8 ½ " by 11" study guide for this test
   (2) your simple, non-graphing calculator and
   (3) your pencils
   (4) your BluGold ID

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1. What is the word name for the following decimal number: 7.06

   Seven and six hundredths

2. Arrange these values in order from smallest to largest: $\dfrac{37}{10}$ 3.67 $\dfrac{37}{100}$ 3.71

   $\dfrac{37}{100}$ 3.67 $\dfrac{37}{10}$ 3.71

   3.70   3.67   .37   3.71
   ③   ②   ①   ④

3. Round 5.8374 to the nearest **hundredths**   and   round 9.57238 to the nearest **thousandths**

   ↑ look here, more than 5   ↑ look here, less than 5

   (5.84)   (9.572)

4. Add   2.912,   5,   0.8,   and   3.14   then Subtract 2.916 from 3.14

   2.912
   5.0   (11.852)   (0.224)
   0.8
   3.14

   $$\begin{array}{r} 3.14 \\ -2.916 \\ \hline 0.224 \end{array}$$

5. Estimate the product of $7.8 \bullet 6.4$ by rounding each number to the nearest whole number before multiplying.

   ~8 • ~6 = about 48   grabbed my calc ☺

   actual 49.92

Multiply: $(5.3)(-7.4)$
   positive times
   negative
   is a negative

   $$\begin{array}{r} 5.3 \\ 7.4 \\ \hline 212 \\ 371 \\ \hline -39.22 \end{array}$$

   (-39.22)

   answer has two decimal places (sum of decimal places in the factors)

6. Divide $-18.9923 \div 7.39$

   neg ÷ pos = neg

   (-2.57)

   $$\begin{array}{r} -2.57 \\ 7.39 \overline{)18.9923} \\ 14\ 78 \\ \hline 4\ 21\ 2 \\ 36\ 95 \\ \hline 5\ 1\ 73 \\ 5\ 1\ 73 \\ \hline 0 \end{array}$$

7. Simplify the expression:

$$6 - 4.4 + (2.3 + 0.2)^2 - 4.2 \bullet 0.3$$

$$\frac{6 - 4.4 + 6.25 - 1.26}{(2.5)^2} =$$

$$\frac{1.6 + 6.25 - 1.26}{}$$

$$7.85 - 1.26 = \boxed{6.59}$$

8. $\dfrac{17}{12}$ written as a decimal is ...

$$12\overline{)17.} \quad 1.41666 \ldots \Rightarrow 1.41\overline{6}$$

$$\begin{array}{r} 12 \\ \hline 50 \\ 48 \\ \hline 20 \\ 12 \\ \hline 80 \end{array} \quad \begin{array}{r} 80 \\ 72 \\ \hline 80 \\ 72 \\ \hline 80 \ldots \end{array}$$

9. Write 0.64 as a common fraction. Then write the answer in lowest terms.

$$\frac{64}{100} \Rightarrow \boxed{\frac{16}{25}}$$

10. Solve the equation for the value of x:

$$6.2x - (x - 3.7) = 5.1x + 3.0$$

$$6.2x - 1x + 3.7 = 5.1x + 3.0$$

combine like terms

helpful   watch sign

could have multiplied everything by 10 has to remove decimals or wait to here

$$5.2x + 3.7 = 5.1x + 3.0$$
$$ - 3.7 = - 3.7$$
$$\frac{5.2x}{-5.1x} = \frac{5.1x - 0.7}{-5.1x}$$
$$.1x = -0.7$$

$$.1x = -0.7$$
multiply both sides by 10
$$1x = -7$$
$$x = -7$$
$$\{-7\}$$

$$3.5x + 2.1 = 5.7x - (x - 2.7)$$
$$3.5x + 2.1 = 5.7x - 1x + 2.7$$
$$3.5x + 2.1 = 4.7x + 2.7$$

multiply everything by 10

$$35x + 21 = 47x + 27$$
$$ - 27 = - 27$$
$$\frac{35x - 6}{-35x} = \frac{47x}{-35x}$$
$$-6 = 12x$$

$$\frac{-6}{12} = \frac{12x}{12}$$
$$-\frac{1}{2} = x$$

$$\{-.5\}$$

11. Find the missing integer length for the right triangle. Remember: $a^2 + b^2 = c^2$

If 'a' and 'b' represent the two sides of a right triangle and 'c' represents the hypotenuse,

Find C if A = 7 and B = 24.

$7^2 + 24^2 = C^2$
$49 + 576 = C^2$
$625 = C^2$
$\boxed{25 = C}$
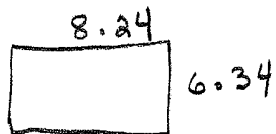
Find B if A = 12 and C = 20.

$12^2 + B^2 = 20^2$
$144 + B^2 = 400$
$-144 \qquad = -144$
$B^2 = 256$
$\boxed{B = 16}$

12. At a grocery store, Sally buys a roast that is marked $7.31.
She pays for her purchase with a $50 bill. How much change does she get?

$$\begin{array}{r} 50.00 \\ -\;\;7.31 \\ \hline \$42.69 \text{ in change} \end{array}$$

13. A sheet of paper has dimensions 6.34 centimeters by 8.24 centimeters (cm). What is its area?

8.24
6.34

$\boxed{52.2416 \text{ sq. cm.}}$

A department paid $36.04 for 212 pencils. What was the price per pencil?

$212 \overline{)36.04} = 0.17$

$\boxed{17 ¢ \text{ per pencil}}$

14. Consider the following ticket prices (in dollars) for 10 concerts held this school year.

13, 15, 15, 30, 15, 12, 30, 16, 23, 24

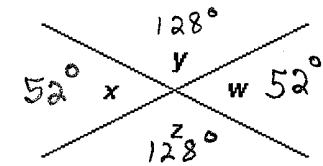Find the MEAN price, the MEDIAN price, and the MODE price.

MEAN : sum ÷ 10
193 ÷ 10
$\boxed{19.3}$

MEDIAN : put in order, find the center
12 13 15 15 15 ∧ 16 23 24 30 30
$\boxed{15.5}$

MODE : most often
$\boxed{15}$

15. Suppose $m\angle w = 52°$.

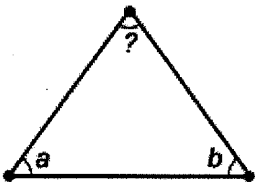Find the measures of $\angle x$, $\angle y$, and of an angle that is the complement of $\angle w$.

128°
y
52° x   w 52°
128°

$\angle x = 52°$ since w and x are vertical angles.

$\angle w$ and $\angle y$ are supplementary (total 180°), so $\angle y = 128°$
$\angle z = 128°$

What is the supplement of $\angle w$?

$\angle w$ and its complement total 90°, so its complement is 38°.

16. Find the measure of the third angle in this triangle.

?
a   b
$a = 51°$ **and** $b = 67°$

angles of a triangle total 180°

$51° + 67° + x° = 180°$

$118° + x° = 180°$
$-118°   = -118°$

$x° = 62°$

17. A circle has a diameter of 8.8 ft. Find its **circumference** using 3.14 for π.
18. A circle has a diameter of 8.8 ft. Find its **area** using 3.14 for π.
   (Round both answers to one decimal place and be sure to include the proper units.)

$C = \pi d$

$C = (3.14)(8.8)$

$= 27.632$

$C \approx 27.6$ ft.

$\approx$ means approximate

$A = \pi r^2$
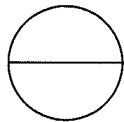
since 8.8 is the diameter
4.4 is the radius

$A = \pi (4.4)^2$

$A = (3.14)(19.36)$

$A = 60.7904$

$A \approx 60.8$ ft^2

A triangular-shaped plot of ground has a base of 24 meters and an altitude of 16 meters. Find its area.
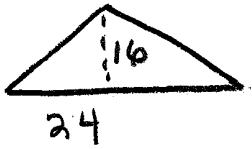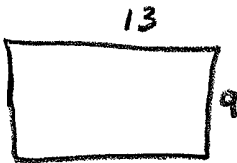

$$area = \frac{1}{2} b \cdot h$$
$$area = \frac{1}{2} \cdot 24 \cdot 16$$
$$area = 192 \text{ sq. ft.}$$

19. A particular rug design can be purchased for $6.75 per square foot.
    If the rug I want to purchase is 13 ft by 9 ft, what is the rugs area?
    What would be the cost of that rug with that particular rug design?

$$area = 13 \cdot 9$$
$$area = 117 \text{ sq ft} \quad \text{at } 6.75 \text{ per sq ft}$$
$$= 117 (6.75)$$
$$cost = \$789.75$$

20. The inside dimensions of a fish tank are: 8" x 16" x 11". If the tank were filled completely to the top with water, how many cubic inches of water would be in the tank?

$$8 \cdot 6 \cdot 11 = volume$$

$$volume = 1408 \text{ cubic inches}$$