Math 40 Post-Test

The following problems #1-9 should be solved <u>without</u> a calculator.

1. Divide.

a) $57{,}950 \div 19$ b) $7 \div 0$ c) $0 \div 25$ d) $0 \div 0$

2. Simplify.

a) $36 \div 4(-3)$ b) $9 - 6\left[2 - \left(-3^2 + 4\right)\right]$

3. Evaluate the expressions for the give values of the variables.

$\dfrac{3 - \left|a - b^2\right|}{2a}$ for $a = 3,\ b = -6$

4. Solve.

$4 - 5(y + 3) + 2y = 7$

5. Identify a variable, write an equation, solve and state your answer in a complete sentence.

a) Ten less than the quotient of a number and -6 is -2. Find the number.

b) In the 2008 Super Bowl, the New England Patriots scored 3 points less than the New York Giants. A total of 31 points was scored in the game. How many points did each team score?

c) Mercedes is paid a salary of \$480 a week at her job. She worked 8 hr of overtime during the holidays and her weekly paycheck cam to \$672. What is her overtime pay per hour?

6. Perform the indicated operation and simplify to lowest terms.

$-24 \cdot -\dfrac{5}{72} \div -\dfrac{20}{3}$

7. Add or Subtract. Simplify answers to lowest terms.

$\dfrac{1}{12} - \dfrac{3}{5} - \left(-\dfrac{3}{10}\right)$

8. Solve.

$\dfrac{3}{4}y = \dfrac{3}{2}y + \dfrac{1}{5}$

9. Divide. Round the answer to the indicated place value.

$7.3 \div 0.7$ thousandths

The following problems #10-24 may be solved with a calculator.

10. Solve.

$0.04(p-2)=0.05p+0.16$

11. Identify a variable, write an equation, solve and state the answer in a complete sentence.

The perimeter of a triangle is 21.5 yd. The length of the longest side is twice the length of the shortest side. The length of the middle side is 3.1 yd longer than the length of the shortest side. Find the lengths of all the sides.

12. Solve.

$$\frac{x-3}{3x}=\frac{2}{3}$$

13. Identify a variable, write an equation, solve and state the answer in a complete sentence.

Yellowstone National Park in Wyoming has the largest population of free-roaming bison. To approximate the number of bison, 200 are captured and tagged and then let free to roam. Later, a sample of 120 bison is observed and 6 have tags. Approximate the population of bison in the park.

14. Write a percent equation and solve.

400 is what percent of 300?

15. Identify a variable, write an equation, solve and state the answer in a complete sentence.

One month before a stock car race, the sale of ads for the official race program was slow. Only 21 pages, or just 70% of the available pages, had been sold. What was the total number of pages devoted to advertising in the program?

16. Identify a variable, write an equation, solve and state the answer in a complete sentence.

A car has been discounted 30% off the original price. The sale price is now $21,140. What was the **original** price of the car?

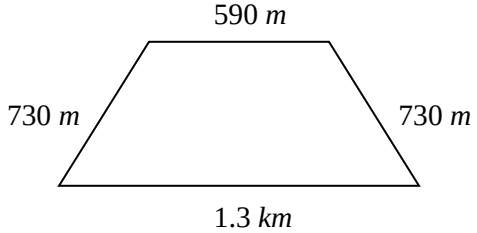
Summary of U.S. Customary Units of Length, Weight and Capacity

1 foot = 12 inches	1 pound = 16 ounces	3 teaspoons = 1 tablespoon	1 quart = 2 pints
1 yard = 3 feet	1 ton = 2000 pounds	1 cup = 8 fluid ounces	1 gallon = 4 quarts
1 mile = 5280 feet		1 pint = 2 cups	

17. Convert the units. $2\frac{1}{3}$ wk = _____ mins

18. Convert the units. 19 mg = _____ dag

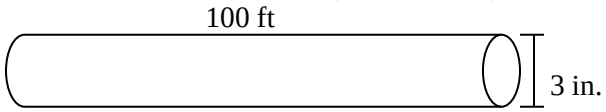
19. Determine the perimeter.



Formulas

$V = lwh$	$V = s^3$	$V = \pi r^2 h$	$V = \frac{1}{3}\pi r^2 h$	$V = \frac{4}{3}\pi r^3$
$SA = 6s^2$	$SA = 2lh + 2lw + 2hw$	$SA = 2\pi rh + 2\pi r^2$	$SA = 4\pi r^2$	

20. Find the volume of water (in cubic feet) that the pipe can hold.



21. Richard needs 9 in. of topsoil for his vegetable garden that is in the shape of a rectangle, 25 ft by 30 ft.

a) Find the amount of topsoil needed in cubic feet.

b) If topsoil can be purchased in bags containing 3 ft^3, how many bags must Richard purchase?

22. Graph the equation. Label at least two points on the graph.

$2x - 3y = 6$

23. Add the polynomials.

$\left(11a^2b - 7ab - 4ab^2\right) + \left(-2a^2b - ab + ab^2\right)$

24. Subtract $\left(13m^2 - 9m + \frac{2}{3}\right)$ **from** $\left(-9w^2 + w - 4\right)$**.**