Math Skills Assessment

Name: _____ **SECTION:** **Score:**

Date: _____

1. Add/Subtraction _____
2. Mult. /Division _____
3. Fractions/Percents/Angles _____
4. Metric System _____
5. Formulas _____
6. Introduction to Algebra _____

Instructions: Please answer the following questions in the space provided. Calculations may be performed in the blank area adjacent to each question or on a separate sheet of paper.
Calculators may <u>not</u> be used to complete this assessment.

SECTION 1: Addition/Subtraction **Score: _____**

Addition:

1. 65 + 42 + 71 = _____

2. 9 + 16 + 112 = _____

3. 362.1 + 22.5 + 9.04 = _____

4. If you were to work 7.6 hrs (hours) on Monday, 8.1 hrs on Tuesday, 9.0 hrs on Wednesday, 7.8 hours on Thursday, and 8.7 hrs on Friday, how many hours would you have worked during the week? _____

5. In the last month, you placed three separate orders for tools used in the machine shop. The amounts of the orders were $62.55, $98.12, and $110.99. What is the total amount you spent on tools during the month? _____

Subtraction:

6. 6,281 – 4,198 = _____

7. 1,000 – 67 = _____

8. $25.98 - $13.91 = _____

9. If a set of tools for maintenance work costs $368.50 and you get a $100 discount on it, how much do you have to pay for the set? _____

10. An electrician has a spool with approximately 300 feet of wire on it. He needs to use 178 feet of the wire. How much wire will remain after he takes what he needs? _____

SECTION 2: Multiplication and Division **Score: _____**

Multiplication:

1. The product of 22 x 58 equals the product of 58 x 22. True or False? _____

2. 612 x 263 = _____

3. 22.98 x 16 = _____

4. If you ordered 23 boxes of metal parts, how many parts would you get if there were 36 parts in each box? _____

5. The IS department builds printed-circuit boards for computers. Each board contains 118 components. Last week, 2296 boards were completed. How many components were needed for all of the boards? _____

Division:

6. Any number divided by zero equals zero. True or False? _____

7. Any number divided by 1 equals 1. True or False? _____

8. 4,575 ÷ 25 = _____

9. 1,333 ÷ 43 = _____

10. There are 7 water tanks of equal size in your plant. The plant needs a total of 1,673 gallons of distilled water for its production process. How many gallons of water must each of the 7 tanks be able to hold? _____

SECTION 3: Fractions/Percentages/Angles **Score: _____**

1. Reduce the following fraction to its lowest terms: 8/12 _____

2. Change the following improper fraction to a mixed number and express your answer in lowest terms: 29/6: _____

3. Change the following mixed number to an improper fraction: 6 5/16: _____

4. 1 1/5 + 2 3/10 = _____

5. 3 11/20 – 1 4/5 = _____

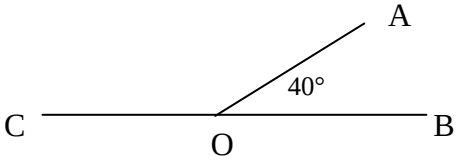
6. 1/2 x 1/3 = _____

7. Change the following decimal to a fraction. Reduce your answer to it's lowest terms: .168 _____

8. The employees of the department have been promised a 7% bonus at Christmas if they exceed their production quota for the year. What would be the bonus for an employee earning $23,500 each year? _____

9. The dimensions on a blueprint indicate that 1" (inch) equals 3.5' (feet). If one wall of a room on the blueprint is 6", what is the actual length of the wall? _____

10. If angle AOB in the figure below is 40° , calculate the degrees in angle AOC. _____



SECTION 4: Metric System **Score: _____**

1. Indicate what the following metric symbol stands for: kg _____

2. 10 centimeters = 1 _____

3. 136 km = _____m

For questions 4-7 fill in the blanks with the SI (International System of Units) base units used to measure the following:

4. Length _____

5. Torque _____

6. Energy _____

7. Power _____

8. If the diameter of a screw is 5 mm, what is its diameter in inches? _____

9. The maximum load that one of your delivery trucks will carry is 10,000 lb. If you have a shipment of 5,000 kg, will the truck be able to transport the entire shipment (Yes or No)? _____

10. Complete the following conversion: 500 J to foot-pounds _____

SECTION 5: Formulas **Score: _____**

1. A mathematical statement that something is equal to something else is a/an _____

2. The distance around a figure is the _____

3. The expression 6w means the same as 6 x w (True or False)? _____

4. If you extend parallel lines, they'll eventually cross each other (True or False)? _____

5. Find the area of the rectangle shown below: _____

6. Find x in the formula $x = 5a - \frac{4b}{c}$, if a = 21/8, b = 1/4, and c = 1/2. _____

7. Find x in the formula $x = 8 - 4a(b-c)$, if a = 1/3, b = 21/6, and c = 1/2. _____

For questions 8-10, solve the equations for the unknown quantity:

8. $9x - 9 = 5x + 7$ _____

9. $6 + \frac{1}{2}x = 8 + \frac{1}{3}x$ _____

10. $x - \frac{x}{3} = \frac{3}{4} + \frac{1}{2}$ _____

SECTION 6: Introduction to Algebra **Score: _____**

1. –69 – (-12) = _____

2. (+8) (+5) = _____

3. Complete the division of the following signed number: $\frac{-20}{+8}$ _____

4. Solve the following problem: (10 x 2 + 1) x (-6 + 1) _____

5. Combine like terms in the following expression: –12ab + 7ab _____

6. Combine like terms in the following expression: 3a – b – c + 5a _____

7. Complete the following multiplication problem: 82a x (-13) _____

8. Complete the following multiplication problem: 200**x** x 3 x 300y _____

9. Perform division in the following problem: 5ab ÷ ab _____

10. Remove parentheses from the following expression and combine like terms (if possible):
    5a – 2b – (a – 2b) _____