Test One

This is a self-diagnostic test. Every pair of questions relates to a worksheet in a series available in the MUMS the WORD series. For example question 5 relates to worksheet 1.5 Percentages. If you score 100% then we feel you are adequately prepared for your introductory statistics course. For those of you who had trouble with a few of the questions, we recommend working through the appropriate worksheets and associated computer aided learning packages in this series.

1. (a) $3 \times (2 + 5) - 6 \div 3$
   (b) $3 \times 3 + 2 \times 1 + 4 \div 2$

2. (a) What are the prime factors of 60?
   (b) What is the biggest number that divides 27 and 36?

3. (a) Simplify $\frac{11}{20}$.
   (b) Calculate $\frac{4}{8} + \frac{3}{10}$.

4. (a) Write $\frac{1}{20}$ as a decimal.
   (b) Write 0.06 as a fraction.

5. (a) Find 10 percent of 75.
   (b) Write $\frac{4}{5}$ as a percentage of a whole.

6. (a) Calculate $-8 + 10$.
   (b) Calculate $2 - 6$.

7. (a) Calculate $-4 \times -3$.
   (b) Calculate $-6/3$.

8. (a) Simplify $3^3 \times 2$.
   (b) Simplify $\sqrt{2} \times \sqrt{8}$.

9. (a) Simplify $x - (5 + x)$.
   (b) Simplify $\frac{x}{3} + \frac{x}{2}$.

10. (a) Expand and collect like terms:
    $(x + y)(x - y)$.
    (b) If $x = 2$ and $y = 5$, what is the value of $3x + 2y$?
Answers to Test One

1. (a) 19
   (b) 13

2. (a) 2, 3, 5
   (b) 9

3. (a) \( \frac{2}{3} \)
   (b) \( \frac{27}{20} \)

4. (a) 0.05
   (b) \( \frac{6}{100} \)

5. (a) 7.5
   (b) 60%

6. (a) 2
   (b) -4

7. (a) 12
   (b) -2

8. (a) 54
   (b) 4

9. (a) -5
   (b) \( \frac{5x}{6} \)

10. (a) \( x^2 - y^2 \)
    (b) 6