

### Practice Set 1

Solve the following equations.

1. If  $y = 12x + 14$ , what is  $y$  when  $x = 10$ ?
2. If  $y = 12x + 14$ , what is  $x$  when  $y = 14$ ?
3. If  $z = 4x + 3y + 8$  and  $y = 2x$ , what is  $z$  when  $x = 6$ ?
4. Solve for  $y$  if  $y = 3xy - 6$ .
5. A straight line has a slope of 4 and a  $y$ -intercept of -8. Write the equation for the line. Is the line continuous or discrete? Why?
6. Solve for "n" if  $z = \frac{(x - \mu)}{(\sigma/\sqrt{n})}$
7. If  $x$  is 14 units from  $\mu$ ,  $z = 1.96$ , and  $\sigma = 2.0$ , find the numerical value of "n" using your answer for # 6.

### Practice Set 2

1. Find  $4^2$  and also show the solution using the real number line.
2. Find  $4^3$  and also show the solution using the real number line.
3. Find  $4^{12}$
4. Find  $164^0$
5. Find  $\sqrt{144}$  and also show the solution using the real number line.
6. Find  $\sqrt{15}$  using iteration.
7. Find  $(\sqrt{25})^2$
8. Solve for  $x$  if  $y = 2x^2 + 6y^2$
9. If  $z = 1.96$ ,  $\sigma = 4.0$ , and  $E = 1.5$ , find "n" using the equation

$$n = \left[ \frac{z\sigma}{E} \right]^2$$

10. Find  $8^2$ ,  $-8^2$ ,  $\sqrt{64}$

### Practice Set 3

1. Find  $9!$
2. Find  ${}_9P_7$  where  ${}_9P_7 = 9! / (9-7)!$
3. Find  ${}_9C_7$  where  ${}_9C_7 = 9! / [(9-7)! 7!]$
4. Find  $(5! \times 7!)$
5. 24 orange-pickers picked 10,324 bushels of oranges in one day. On average, how many bushels were picked by each orange-picker?
6. A corporation shows earnings (net income) of \$10,243,627. There are 1,253,000 shares of stock outstanding. What is the earnings per share?
7. Between 1977 and 2002, there were 537,000 murders committed in the US. During the same period, there were 808 murderers executed for their crime. What percentage of murders were punished by the death penalty?  
  
If you commit murder, what is the probability you will be executed?
8. Evaluate  $\sum x$  for  $x = 7, 6, 5, 4, 3, 2, 1$
9. Evaluate  $\sum (x+y)$  for  $x = 1, 2, 3$ , and  $y = 3$ .
10. The US Census bureau shows that 180,564,000 Americans held jobs in May, 2003, out of a total population of 289,830,000. What percent of Americans held jobs in May, 2003? Given that 62.1% of Americans are of employable age (between 18 and 65 years old), does it make sense that 6% of Americans are unemployed?

### Practice Set 4

Solve the following using calculation tables.

1. Calculate  $\sum x^2 y^2$  for the following  $(x,y)$  pairs:  $(3,1), (4,2), (5,3), (6,7)$
2. Calculate  $\sum (x - y)^2$  for the following  $(x,y)$  pairs:  $(2,3), (7,4), (6,1), (9,8), (10,1)$
3. Calculate  $n\sum x^2 - (\sum x)^2$  for  $x = 5, 6, 7, 8, 9, 10$  and  $n = 5$ .