**Post-Quiz 2**

**Graphing**

Name: _________________________

**Multiple Choice (3 points each)**

1. If we say that two variables are directly related, this means that:  
   A) the relationship between the two is purely random;  
   B) an increase in one variable is associated with a decrease in the other variable;  
   C) an increase in one variable is associated with an increase in the other variable;  
   D) the two graph as a downsloping line.

2. If we say that two variables are inversely related, this means that:  
   A) the two graph as an upsloping line;  
   B) an increase in one variable is associated with a decrease in the other;  
   C) an increase in one variable is associated with an increase in the other;  
   D) the resulting relationship can be portrayed by a straight line parallel to the horizontal axis.

3. Economists:  
   A) always put the independent variable on the horizontal axis and the dependent variable on the vertical axis;  
   B) always put the dependent variable on the horizontal axis and the independent variable on the vertical axis;  
   C) are somewhat arbitrary in assigning independent and dependent variables to the horizontal and vertical axes;  
   D) measure the slope of a line differently than do mathematicians.

4. Which of the following statements is correct?  
   A) The value of the independent variable is determined by the value of the dependent variable;  
   B) The value of the dependent variable is determined by the value of the independent variable;  
   C) The dependent variable designates the "cause" and the independent variable the "effect;"  
   D) Dependent variables graph as upsloping lines; independent variables graph as downsloping lines.

5. Refer to the above diagram. Which line(s) show(s) a positive relationship between x and y?  
   A) A only;  
   B) both A and D;  
   C) A, B, and D;  
   D) both C and E.

6. Refer to the above diagram. Which line(s) show(s) a negative vertical intercept?  
   A) C only;  
   B) both C and E;  
   C) B, C, and E;  
   D) both B and C.
7. Answer on the basis of the relationships shown in the above four figures. The amount of Y is inversely related to the amount of X in: A) 2 only; B) both 1 and 3; C) 3 only; D) 1 only.

Answer the next question(s) on the basis of the following data:

<table>
<thead>
<tr>
<th>After-tax income</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1000</td>
<td>$900</td>
</tr>
<tr>
<td>2000</td>
<td>1800</td>
</tr>
<tr>
<td>3000</td>
<td>2700</td>
</tr>
<tr>
<td>4000</td>
<td>3600</td>
</tr>
<tr>
<td>5000</td>
<td>4500</td>
</tr>
</tbody>
</table>

8. The above data suggest that: A) consumption varies inversely with after-tax income; B) consumption varies directly with after-tax income; C) consumption and after-tax income are unrelated; D) a tax increase will increase consumption.

9. Refer to the above diagram. The equation which shows the relationship between Y and X is: A) $Y = 50 + 1/4 X$; B) $X = 1/4 Y$; C) $Y = .4X$; D) $Y = 1/4 X - 50$.

10. If the equation $y = 5 + 6x$ was graphed, the: A) slope would be −5; B) slope would be +5; C) slope would be +6; D) vertical intercept would be +.6.

11. If the equation $y = -10 + 2.5x$ was plotted: A) the vertical intercept would be −10; B) the slope would be +2.5; C) it would graph as an upsloping line; D) all of the above would be true.
12. The shift from line A to line A' represents a change in: A) the slope only; B) the intercept only; C) both the slope and the intercept; D) neither the slope nor the intercept.

13. In the above diagram the vertical intercept and slope are: A) 4 and -1 1/3 respectively; B) 3 and -1 1/3 respectively; C) 3 and + 3/4 respectively; D) 4 and + 3/4 respectively.

14. In the above diagram the equation for this line is: A) y = 4 - 1 1/3 x; B) y = 3 + 3/4 x; C) y = 4 - 3/4 x; D) y = 4 + 1 1/3 x.

15. If we are considering the relationship between two variables and release the "other things equal" assumption, we would expect: A) the relationship to change from direct to inverse; B) the line representing that relationship on a graph to change locations; C) the data points representing the relationship to become more randomly scattered; D) the relationship to change from inverse to direct.
16. Refer to the above diagram. The slope of curve ZZ at point A is: A) +2; B) +2 ½; C) -2 ½; D) +4; E) none of the above.

17. Refer to the above diagram. The slope of curve ZZ at point B is: A) infinity; B) zero; C) one; D) none of the above.

18. Refer to the above diagram. The slope of curve ZZ at point C is: A) –4; B) –2; C) -2 2/5; D) +3; E) none of the above.

19. The slope of a line parallel to the vertical axis is: A) zero; B) one; C) infinite; D) one-half; E) none of the above.

20. Slopes of lines are especially important in economics because: A) they measure marginal changes; B) they always tell us something about profits; C) positive slopes are always preferred to negative slopes; D) they always relate to resource and output scarcity.

21. When the relationship between two variables changes: A) There is movement from one point on the curve to another point on the curve; B) The curve becomes linear; C) The entire curve shifts; D) All of the above.
22. In the figure above, a grade-point average of 3.0 is associated with how many hours of study time per week? A) 30; B) 20; C) 10; D) 40.

23. The above figure suggests that the relationship between the variables is: A) Negative after 30 hours of study; B) Everywhere linear; C) Linear at places and nonlinear at places; D) Linear at places and nonlinear at places but always negatively sloped.

**True/False (2 points each)**

1. ___ If two sets of data are directly related, they will graph as an upsloping line.

2. ___ If A is the dependent variable and B is the independent variable, then a change in B results in a change in A.

3. ___ The slope of a line will *not* be affected by the choice of units for either variable.

4. ___ A line with an infinite slope indicates that two variables are inversely related to each other.

5. ___ The ratio of the absolute horizontal change to the absolute vertical change between two points on a straight line is its slope.

6. ___ If the slope of a straight line on a two-variable (x,y) graph was 2 and the vertical intercept was 3, then a value of 5 for x means that y is 13.

7. ___ If the slope of a straight line on a two-variable (x,y) graph was 3 and the vertical intercept was 2, then a value of 2 for x means that y is 10.

8. ___ If the slope of a straight line is -3, then the two variables in a graph are inversely related.

9. ___ If a linear equation was $R = 8 - 2P$, the vertical intercept is 8.

10. ___ If the slope of a nonlinear curve is zero at a point, a straight line tangent to that point would be horizontal.
**Post-Quiz 2**

**Graphing**

*Short Answer (10 points each) – Use a separate piece of paper for these questions.*

1. Graph the information in the following table and calculate the slope.

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

2. Graph the equation $y = 3 - \frac{1}{4}x$. What is the dependent variable? What is the independent variable? What is the slope? What is the vertical intercept?