

No notes or calculators are allowed when taking this test. Be sure to follow the directions for each part of the test. You may do scratch work on the back of the last page of this test.

Part I. Write your answers on the appropriate lines in the answer column.

1. Simplify: $(-3)^2 - 7(8) \div 2 + 2$ 1. _____

2. Solve: $\frac{12x}{5} = 2x + 16$ 2. _____

3. Solve: $\frac{8}{15} = \frac{16}{5x}$ 3. _____

4. Solve: $\frac{x-3}{5x} = \frac{2}{7}$ 4. _____

5. What is the slope of the line with equation $-2x + 3y = 12$? 5. _____

6. What is the y-intercept of the line with equation $-2x + 3y = 12$? 6. _____

7. What is an equation for the line with y-intercept 5 that is parallel to the line $y = 4x + 3$? 7. _____

8. What is an equation for the line with y-intercept 5 that is perpendicular to the line $y = 4x + 3$? 8. _____

9. Determine the slope of the line passing through (2, 10) and (5, 4). 9. _____

10. 3% of what number is 36? 10. _____

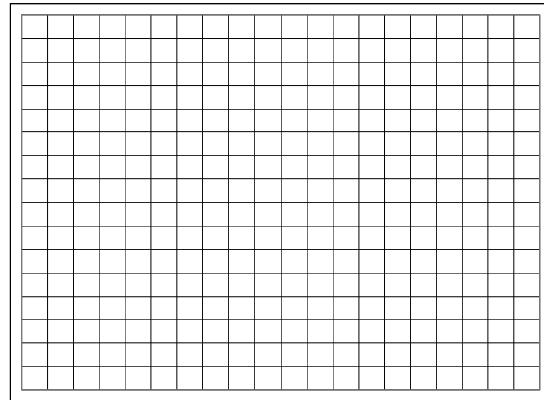
11. What percent of 120 is 0.6 ?

11. _____

Part II (5 points each). Show your work in the spaces provided. Identify any variables you introduce and express your conclusions using appropriate sentences.

12. Consider the data in the table below. Graph the data points and show how to determine an equation for the line that contains those data points. Draw and label your axes.

x	y
-4	-5
-2	-1
0	3
2	7
4	11
6	15



13.-15. Show how to solve the following word problems using the steps recommended in the text. (Introduce and define variables. Set up an equation. Solve the equation. State your conclusion.)

13. A machine can process 600 parts in 45 minutes. How many parts can it process in one hour and fifteen minutes?

14. During the peak season, the Excelsior Hotel has a monthly expenditure budget of \$40,000 and has 50 guests. During the off season, when there are only 30 guests in the hotel, the monthly expenditure falls to \$28,000. How many guests would you expect the Excelsior Hotel had in June when its monthly expenditure was \$34,000?

15. Ivy & Co. makes widgets. The company's monthly costs are \$10,000 for salaries and \$2,000 for other overhead and a material cost of \$5 for each widget produced. Suppose the company sells all the widgets it produces for \$10 each.

Write equations for (a) the company's total monthly costs given the number of widgets produced, (b) the company's monthly revenue given the number of widgets produced and sold. (We are assuming all widgets produced are sold), and (c) the company's net revenue (profit) given the number of widgets produced.

How many widgets must the company produce to break even?

