Math 113 Exam #2 Review Name_____

Do the following problems as indicated.

Solve the equation.

1) $x + \frac{1}{6} = \frac{1}{4}$

2) $m - \frac{1}{2} = \frac{3}{5}$

3) $x - \frac{3}{8} = -\frac{5}{16}$

4) $\frac{-x}{3} = 6$

5) $-4x = -28$

6) $\frac{7}{8}x = 56$

7) $2n - 5 = 15$

8) $-5x - 6 = 39$

9) $x + \frac{1}{5}x = 24$

10) $-6t + 4 = 10 + 5t$

11) $-6b + 1 + 4b = -3b + 6$

12) $\frac{2}{5}x - \frac{1}{3}x = 4$

13) $-5 + x = x - 5$

14) $\frac{1}{3}p - \frac{3}{8}p = 3$

Solve the equation.

15) $6x - 5 + 8x - 6 = 8x + 6x + 11$

16) $-6q + 1.7 = -35.1 - 1.4q$

17) $-11q = -69.3 - 1.1q$

18) $2[3 - 3(x + 1)] + 1 = 2(-15 - x) + 2x + 15$

Solve the equation.

19) $2(8x - 16) = 4(8x - 4)$

20) $9x - (6x - 1) = 2$

21) $6(x + 4) - (6x + 24) = 0$

22) $\frac{1}{3}(9x - 12) = \frac{1}{2}(8x - 6)$

Evaluate the formula for the given values of the variables.

23) $P = 2L + 2W$; $L = 5$ in., $W = 9$ in.

24) $d = rt$; $r = 57$ miles per hour, $t = 3$ hours

25) When all n teams in a league play every other team twice, a total of N games are played, where $N = n^2 - n$. A basketball league has 8 teams and all teams play each other twice. How many games are played?

Solve.

26) $V = \frac{1}{3}Bh$ for h

27) $x = \frac{w + y + z}{6}$ for y

28) $F = \frac{9}{5}C + 32$ for C

Solve the problem. Round to the nearest hundredth, if necessary.

29) What is 5% of 400?

30) 65 is 30% of what number?

31) What is 39% of 1343?

32) 34% of what number is 68?

33) What number is 160% of 369?

34) 70% of what number is 54?

Solve the problem. Round to the nearest tenth of a

35) What percent of 96 is 48?

36) 4.1 is what percent of 24.6?

37) 946 is what percent of 769?

Solve the problem.

38) During one year, the Schmidt's real estate bill included $273 for miscellaneous services. Of this amount, 32% went to the library fund. How much money did the library receive?

39) Sarah left a 15% tip of $4.65 for a meal. What was the cost of the meal before the tip?

40) Andy left a 15% tip for a meal that cost $52. What was the total cost of the meal including the tip?

41) Jennifer's annual salary increased from $29,000 to $44,000 over the last five years. Find the percent increase in her salary during this time period. Round to the nearest tenth of a percent.

42) One half of a number is 3 more than one-sixth the same number. What is the number?

43) The sum of three consecutive integers is 330. Find the integers.

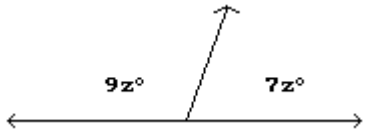
44) The sum of three consecutive even integers is 204. Find the integers.

45) If the first and third of three consecutive odd integers are added, the result is 57 less than five times the second integer. Find the third integer.

46) A rectangular Persian carpet has a perimeter of 196 inches. The length of the carpet is 26 inches more than the width. What are the dimensions of the carpet?

47) A pie-shaped (triangular) lake-front lot has a perimeter of 2000 feet. One side is 200 feet longer than the shortest side, while the third side is 300 feet longer than the shortest side. Find the lengths of all three sides.

48) Find the measures of the supplementary angles.



49) If Gloria received a 8 percent raise and is now making $25,920 a year, what was her salary before the raise? Round to the nearest dollar if necessary.

50) On Monday, an investor bought 100 shares of stock. On Tuesday, the value of the shares went up 8%. How much did the investor pay for the 100 shares if he sold them Wednesday morning for $1620? Round to the nearest dollar if necessary.

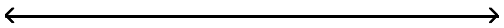
51) A high school graduating class is made up of 601 students. There are 91 more girls than boys. How many boys are in the class?

52) On a road trip from Chicago to New Orleans, Peter stopped in Memphis which is 540 miles from Chicago. If Memphis is 0.6 of the trip to New Orleans, how far is it from Chicago to New Orleans?

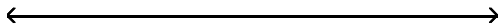
Graph the inequality.

53) $x < -6$

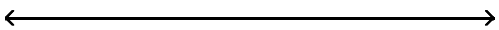
54) $x \geq 5$



55) $x \leq -6$



56) $-3 \leq x \leq 1$



Solve using the addition and multiplication principles.

57) $8 + 5x < 25$

58) $11y + 2 \geq 10y - 4$

59) $-13a - 10 \geq -12a - 21$

60) $15x + 21 > 3(4x + 4)$

61) $\frac{x}{2} + 6 \leq 7$

62) $0.6x + 12 + x > 2x + 6 - 0.5x$

Translate the sentence to an algebraic inequality.

63) The score on a test was between 86 and 71.

64) The cost is no more than $308.92.

65) The number of people at a concert is not to exceed 4193.

66) The height of a member of the basketball team is at least 80 inches.

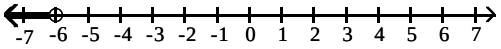
Solve the problem.

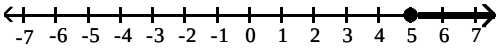
67) A shop keeper is making a triangular sign for his store front, but he must keep the sign under 20 ft^2 to adhere to zoning laws. If the base of the sign is 2 ft, what is the maximum height of the triangular sign?

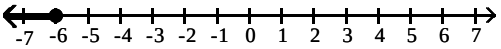
68) One side of a rectangle is 4 times the other, and the perimeter is not to exceed 160. Find the possible values for x, the length of the shorter side.

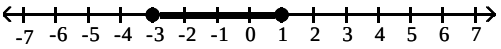
69) In order for a chemical reaction to take place, the Fahrenheit temperature of the reagents must be at least 155.45°F. Find the Celsius temperatures at which the reaction may occur. $(F = \frac{9}{5}C + 32)$

70) Jim has gotten scores of 68 and 72 on his first two tests. What score must he get on his third test to keep an average of 75 or greater?

1) $\frac{1}{12}$
2) $\frac{11}{10}$
3) $\frac{1}{16}$
4) –18
5) 7
6) 64
7) 10
8) –9
9) 20
10) $-\frac{6}{11}$
11) 5
12) 60
13) All real numbers
14) –72
15) No solution
16) 8
17) 7
18) $\frac{8}{3}$
19) –1
20) $\frac{1}{3}$
21) All real numbers
22) –1
23) P = 28 in.
24) d = 171 miles
25) 56 games
26) $h = \frac{3V}{B}$
27) $y = 6x - w - z$
28) $C = \frac{5}{9}(F - 32)$
29) 20
30) 216.67
31) 523.77
32) 200
33) 590.4
34) 77.14
35) 50%
36) 16.7%
37) 123.0%
38) $87.36
39) $31.00
40) $59.80
41) 51.7%
42) 9
43) 109, 110, 111
44) 66, 68, 70
45) 21
46) 36 in., 62 in.
47) 500 ft, 700 ft, 800 ft
48) 101.25° and 78.75°
49) $24,000
50) $1500
51) 255 boys
52) 900
53) 

54) 

55) 

56) 

57) $\{x \mid x < \frac{17}{5}\}$
58) {y| y ≥ –6}
59) {a| a ≤ 11}
60) {x| x > –3}
61) {x| x ≤ 2}
62) {x| x > –60}
63) 71 < x < 86
64) x ≤ 308.92
65) x ≤ 4193
66) x ≥ 80
67) 20.0 ft
68) 0 < x ≤ 16
69) C ≥ 68.58°
70) At least 85