Math 115 **Exam #1 Review** **Name**_____

Do the following problems as indicated.

Simplify the expression by combining any like terms.

1) $-9y - 7x - 2x$

2) $-8y + 2 - 5 + 6 + y - 3$

3) $5.9k - 1.6 - 3.8k + 4 + 2.4k$

4) $-7(3n + 8)$

5) $-4(2x - 7) - 4x + 10$

6) $(8z + 2) - (3z - 1)$

Write the following phrase(s) as an algebraic expression and simplify if possible. Let x represent the unknown number.

7) Six times a number, increased by twelve

8) The difference of nineteen and a number, divided by four

9) One–half a number, minus eight, plus three times the number

Solve the equation.

10) $t - 8 = 10$

11) $7y = 6y - 3.2$

12) $-\frac{1}{9}x = -4$

13) $-2x = -16$

14) $\frac{x}{8} + 6 = 8$

15) $7x + 4x + 7 = -9x$

16) $\frac{1}{3}a - \frac{1}{3} = -2$

17) $6a - 5 + 2(a + 1) = -(-5a + 6)$

18) $9x - 6 + 5x - 3 = 4$

19) $0.3x - 0.8x - 8 = 17$

20) $4x - (3x - 1) = 2$

21) $4(4x - 1) = 16$

22) $8x + 6(-2x - 2) = -10 - 6x$

23) $4x - 4 + 8x - 8 = 2x + 10x - 15$

24) $14(4c - 2) = 2c - 8$

25) $5(2z - 5) = 9(z + 3)$

26) $\frac{2x}{5} - \frac{x}{3} = 3$

27) $0.04(4x + 1) = 0.16(x + 7) - 1.08$

28) $\frac{r + 6}{5} = \frac{r + 8}{7}$

29) $\frac{3(y - 2)}{5} = 1 - 3y$

30) $0.15(80) + 0.80x = 0.40(80 + x)$

31) $\frac{1}{5}(10x - 15) = 6(\frac{1}{3}x - \frac{1}{2}) + 10$

32) $\frac{b}{9} - 8 = -1$

33) $0.30x - 0.20(60 + x) = -0.15(60)$

34) $-3.5m + 0.7 + 1.6m = 5.7 - 1.9m - 5$

Solve the formula for the specified variable.

35) $A = \frac{1}{2}bh$ for b

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

Solve the inequality. Graph the solution set and write it in interval notation.

37) $x - 2 < -5$

38) $\frac{x}{-2} < 7$

39) $14x - 6 \leq 2(6x - 11)$

40) $24x + 32 > 4(5x + 17)$

41) $-3(5x - 13) < -18x + 27$

42) $-20x - 16 \leq -4(4x + 7)$

Write the following as an equation, using x for the unknown number. Then solve.

43) Three times the sum of some number plus 2 is equal to 6 times the number minus 21.

44) If 5 times a number is added to –5, the result is equal to 10 times the number. Find the number.

45) The sum of four times a number and 9 is equal to the difference of twice the number and 4. Find the number.

46) The difference of a number and 9 is the same as 39 less the number. Find the number.

47) During an intramural basketball game, Team A scored 18 fewer points than Team B. Together, both teams scored a total of 148 points. How many points did Team A score during the game?

Solve.

48) Mary and her brother John collect foreign coins. Mary has twice the number of coins that John has. Together they have 90 foreign coins. Find how many coins Mary has.

49) 15% of students at a university attended a lecture. If 3000 students are enrolled at the university, about how many students attended the lecture?

50) Of the 120 students in an algebra class, 8 of them received an F on the mid–term exam. What percent of the algebra students received an F on the exam? (Round to the nearest tenth of a percent, if necessary.)

51) Sales at a local ice cream shop went up 30% in 5 years. If 10,000 ice cream cones were sold in the current year, find the number of ice cream cones sold 5 years ago. (Round to the nearest integer, if necessary.)

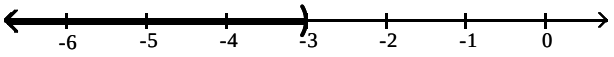
52) Linda and Dave leave simultaneously from the same starting point biking in opposite directions. Linda bikes at 7 miles per hour and Dave bikes at 9 miles per hour. How long will it be until they are 24 miles apart from each other?

53) Alexander and Judy are 32 miles apart on a calm lake paddling toward each other. Alexander paddles at 5 miles per hour, while Judy paddles at 8 miles per hour. How long will it take them to meet?

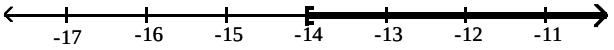
54) Dave can hike on level ground 3 miles an hour faster than he can on uphill terrain. Yesterday, he hiked 29 miles, spending 2 hours on level ground and 5 hours on uphill terrain. Find his average speed on level ground.

Answer Key
Testname: 115EXAM1REVIEW

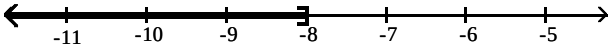
1) $-9y - 9x$
2) $-7y$
3) $4.5k + 2.4$
4) $-21n - 56$
5) $-12x + 38$
6) $5z + 3$
7) $6x + 12$
8) $\frac{19 - x}{4}$
9) $\frac{7}{2}x - 8$
10) 18
11) –3.2
12) 36
13) 8
14) 16
15) $-\frac{7}{20}$
16) –5
17) – 1
18) $\frac{13}{14}$
19) –50
20) 1
21) $\frac{5}{4}$
22) 1
23) no solution
24) $\frac{10}{27}$
25) 52
26) 45
27) all real numbers
28) –1
29) $\frac{11}{18}$
30) 50
31) no solution
32) 63
33) 30
34) all real numbers
35) $b = \frac{2A}{h}$
36) $C = \frac{5}{9}(F - 32)$
37) $(-\infty, -3)$



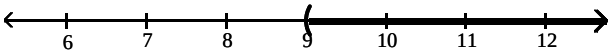
38) $(-14, \infty)$



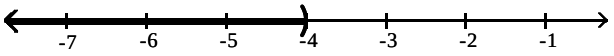
39) $(-\infty, -8]$



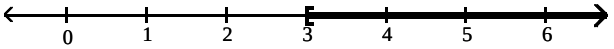
40) $(9, \infty)$



41) $(-\infty, -4)$



42) $[3, \infty)$



43) 9
44) $5x + (-5) = 10x$; –1
45) $4x + 9 = 2x - 4$; $-\frac{13}{2}$
46) 24
47) 65 points
48) 60 coins
49) 450 students
50) 6.7%
51) 7692 ice cream cones
52) $1\frac{1}{2}$ hrs
53) $2\frac{6}{13}$ hrs
54) $6\frac{2}{7}$ mph