Practice # 2 Solving Equations Date:_____ Name_____

Solve the equation. First simplify the expression by combining like terms.

1) $3(y + 2) = 4(y - 4)$ 1) _____

A) {–10} B) {22} C) {–22} D) {10}

2) $2(2z - 2) = 3(z + 3)$ 2) _____

A) {7} B) {–5} C) {5} D) {13}

Solve the equation.

3) $7.0p - 6 = 6p + 8$ 3) _____

A) {0} B) {13} C) {15} D) {14}

4) $0.200x + 1 = 1.200x$ 4) _____

A) {2} B) {–1} C) {0.200} D) {1}

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

A) {17} B) {1} C) {–1} D) {–17}

6) $9p - 18 = 8p - 8$ 6) _____

A) {9} B) {11} C) {–3} D) {10}

7) $-6m + 7 = -7m + 10$ 7) _____

A) {3} B) {–3} C) {4} D) {2}

Solve the equation. First simplify the expression by combining like terms.

8) $-3a + 2 + 4a = 12 - 26$ 8) _____

A) { –40 } B) { –16 } C) { 40 } D) { 16 }

9) $-8b + 1 + 6b = -3b + 6$ 9) _____

A) { –6 } B) { 5 } C) { –1 } D) { 6 }

10) $9.9x - 2.8 - 9.8x = 0.1x - 2.8$ 10) _____

A) { 0 } B) { 1 } C) { –1 } D) { 0.1 }

Solve the equation.

11) $\frac{1}{3}x = -9$ 11) _____

A) {–27} B) {–3} C) {–7} D) {–6}

12) $\frac{1}{15}b = -4.98$ 12) _____

A) {–74.70} B) {–4.00} C) {9.02} D) {10.02}

13) $\frac{n}{5} = 4$ 13) _____

A) {20} B) {0} C) {8} D) {9}

14) $-x = -34$ 14) _____

A) {34} B) {0} C) {1} D) {–34}

15) $18x - 9x + 7x = 32$ 15) _____

A) $\left\{\frac{1}{16}\right\}$ B) $\left\{\frac{1}{2}\right\}$ C) {16} D) {2}

16) $\frac{x}{8} + 9 = 18$ 16) _____

A) 17 B) 218 C) 216 D) 72

17) $\frac{1}{2}f - 4 = 1$ 17) _____

A) 6 B) –6 C) 10 D) –10

18) $-7x - 7 + 4x + 3 = 7$ 18) _____

A) – 1 B) $\frac{11}{3}$ C) 1 D) $-\frac{11}{3}$

19) $\frac{1}{4}(x + 6) = \frac{1}{8}(x + 8)$ 19) _____

A) 4 B) –4 C) {3} D) –12

20) $\frac{1}{3}x - \frac{1}{3} = -2$ 20) _____

A) 5 B) –5 C) –7 D) 7

21) $\frac{2}{5}x - \frac{1}{3}x = 3$ 21) _____

A) –45 B) 45 C) –90 D) 90

22) $\frac{1}{5}x + \frac{6}{5} = \frac{1}{7}x + \frac{8}{7}$ 22) _____

A) 1 B) –1 C) 2 D) –2

23) $0.15(40) + 0.60x = 0.40(40 + x)$ 23) _____

A) 60 B) 50 C) 25 D) 40

24) $0.80x - 0.60(50 + x) = -0.48(50)$ 24) _____

A) 15 B) 40 C) 30 D) 20

Solve the problem.

25) One half of a number is 3 more than one–sixth the same number. What is the number? 25) _____

A) 12 B) 9 C) 18 D) 8

26) If 3 is added to a number and the sum is doubled, the result is 1 less than the number. Find the number. 26) _____

A) –7 B) –5 C) 5 D) –2

27) A merchant has coffee worth $20 a pound that she wishes to mix with 50 pounds of coffee worth $80 a pound to get a mixture that can be sold for $60 a pound. How many pounds of the $20 coffee should be used? 27) _____

A) 37.5 pounds B) 25 pounds C) 75 pounds D) 12.5 pounds

Solve. If needed, round money amounts to two decimal places and all other amounts to one decimal place.

28) How much pure acid should be mixed with 3 gallons of a 50% acid solution in order to get an 80% acid solution? 28) _____

A) 4.5 gal B) 7.5 gal C) 12 gal D) 1.5 gal

29) The manager of a coffee shop has one type of coffee that sells for $7 per pound and another type that sells for $13 per pound. The manager wishes to mix 50 pounds of the $13 coffee to get a mixture that will sell for $9 per pound. How many pounds of the $7 coffee should be used? 29) _____

A) 50 pounds B) 75 pounds C) 100 pounds D) 150 pounds

Solve. Round all amounts to one decimal place.

30) What number is 83% of 277? 30) _____

A) 2299 B) 229.9 C) 22,990 D) 23

31) 10% of what number is 86? 31) _____

A) 86 B) 8.6 C) 860 D) 8600

Substitute the given values into the formula and solve for the unknown variable.

32) $d = rt$; $t = 5$, $d = 10$ 32) _____

A) 5 B) 15 C) 0.5 D) 2

33) $V = \frac{1}{3}Ah$; $V = 20$, $h = 4$ 33) _____

A) 5 B) 80 C) 24 D) 15

34) Use the formula $F = \frac{9}{5}C + 32$ to convert 10°C to degrees Fahrenheit. 34) _____

A) –14°F B) –12.2°F C) 23.4°F D) 50°F

Solve the problem.

35) Find the measure of an angle whose supplement is 6 times the measure of its complement. 35) _____

A) 36° B) 30° C) 15° D) 72°

36) Find the measure of an angle if its supplement measures 285° less than 6 times its complement. 36) _____

A) 83.5° B) 167° C) 7° D) 15°

Solve.

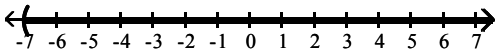
37) A motorcycle traveling at 70 miles per hour overtakes a car traveling at 40 miles per hour that had a three–hour head start. How far from the starting point are the two vehicles? 37) _____

A) $76\frac{4}{11}$ mi B) 280 mi C) 7 mi D) 4 mi

38) Jeff starts driving at 55 miles per hour from the same point that Lauren starts driving at 50 miles per hour. They drive in opposite directions, and Lauren has a half–hour head start. How long will they be able to talk on their cell phones that have a 360–mile range? 38) _____

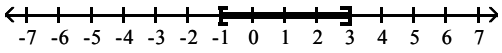
A) $3\frac{4}{21}$ hr B) $3\frac{89}{210}$ hr C) $3\frac{2}{3}$ hr D) $3\frac{3}{7}$ hr

Write an inequality involving the variable x that describes the set of numbers graphed.

39) 

39) _____

A) $x > -7$ B) $x < -7$ C) $x \le -7$ D) $x \ge -7$

40) 

40) _____

A) $-1 \le x < 3$ B) $-1 \le x \le 3$ C) $-1 < x < 3$ D) $-1 < x \le 3$

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

41) $11x < 33$ 41) _____

A) $(-\infty, 3)$ B) $(3, \infty)$ C) $(-\infty, -3)$ D) $(-3, \infty)$

42) $-5x \ge 25$ 42) _____

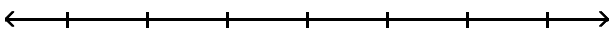
A) $(-\infty, -5]$ B) $(-\infty, 5]$ C) $[-5, \infty)$ D) $[5, \infty)$

43) $13x > 0$ 43) _____

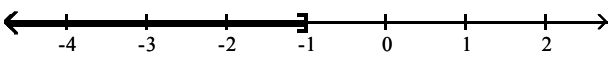
A) $(-\infty, 0)$ B) $(0, \infty)$ C) $(-\infty, \infty)$ D) No solution

Solve the inequality. Write the solution set in interval notation and graph it.

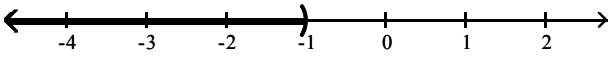
44) $16x - 32 > 4(3x - 9)$ 44) _____



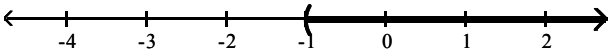
A) $(-\infty, -1]$



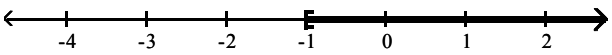
B) $(-\infty, -1)$



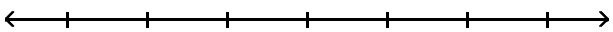
C) $(-1, \infty)$



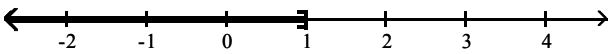
D) $[-1, \infty)$



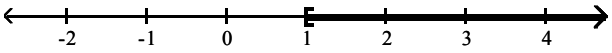
45) $16n - 24 \leq 4(3n - 5)$ 45) _____



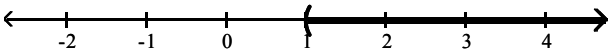
A) $(-\infty, 1]$



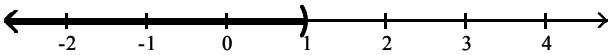
B) $[1, \infty)$



C) $(1, \infty)$

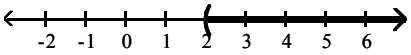


D) $(-\infty, 1)$

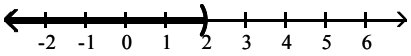


46) $2x + 6 + 5x < 8 + 5x + 2$ 46) _____

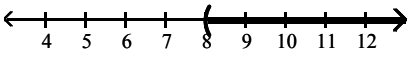
A) $(2, \infty)$



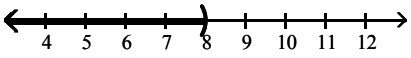
B) $(-\infty, 2)$



C) $(8, \infty)$

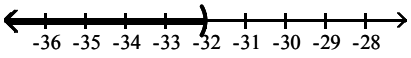


D) $(-\infty, 8)$

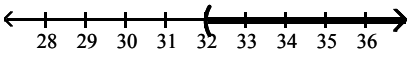


47) $-2(x + 8) + 48x < -6(-8x + 8) - 3x$ 47) _____

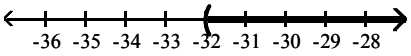
A) $(-\infty, -32)$



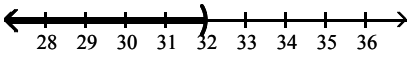
B) $(32, \infty)$



C) $(-32, \infty)$

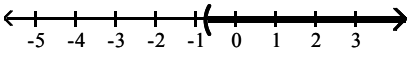


D) $(-\infty, 32)$

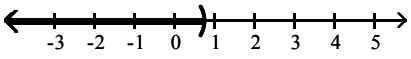


48) $\frac{1}{5}(x + 3) > \frac{1}{9}(x + 6)$ 48) _____

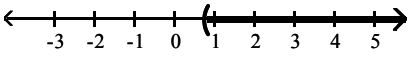
A) $(-0.75, \infty)$



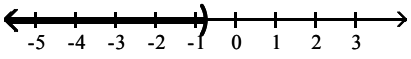
B) $(-\infty, 0.75)$



C) $(0.75, \infty)$

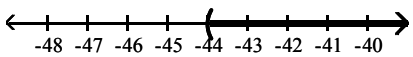


D) $(-\infty, -0.75)$

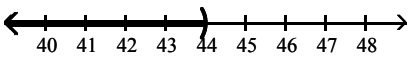


49) $-1(-9x + 12) + 5(x + 10) > -1(-9x - 4) + 3(x - 18)$ 49) _____

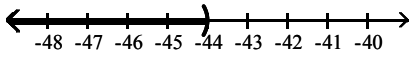
A) $(-44, \infty)$



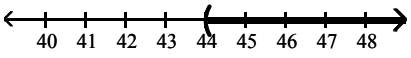
B) $(-\infty, 44)$



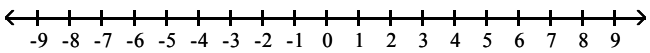
C) $(-\infty, -44)$



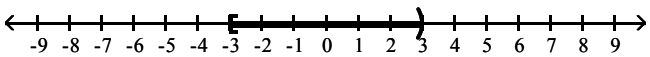
D) $(44, \infty)$



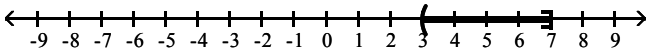
50) $6 < 2x \leq 14$ 50) _____



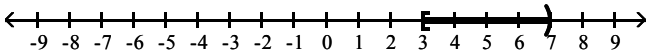
A) $[-3, 3)$



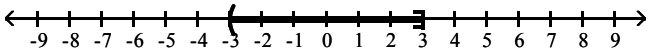
B) $(3, 7]$



C) $[3, 7)$



D) $(-3, 3]$



Answer Key
Testname: PP2

1) B
2) D
3) D
4) D
5) B
6) D
7) A
8) B
9) B
10) A
11) A
12) A
13) A
14) A
15) D
16) D
17) C
18) D
19) B
20) B
21) B
22) B
23) B
24) C
25) B
26) A
27) B
28) A
29) C
30) B
31) C
32) D
33) D
34) D
35) D
36) D
37) B
38) A
39) A
40) B
41) A
42) A
43) B
44) C
45) A
46) B
47) A
48) C
49) A
50) B