Math 084 Spring 2014 Quiz 4 Preparation sections sections 2.3 & 2.5 v02
Dressler

Name_____

Solve the equation.

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

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

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

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

5) $\frac{1}{4}x - \frac{3}{8}x = 2$

6) $\frac{1}{4}x - \frac{3}{8}x = 3$

7) $\frac{1}{4}x - \frac{3}{8}x = 4$

8) $\frac{4}{3} + \frac{x}{5} = \frac{2}{15}$

9) $\frac{3}{4} - \frac{x}{2} = \frac{1}{8}$

10) $\frac{5}{4} + \frac{x}{3} = \frac{7}{12}$

11) $\frac{x}{5} - 6 = \frac{x}{3} - 1$

12) $\frac{x}{3} + 7 = \frac{x}{4} - 5$

13) $\frac{x}{3} - 6 = \frac{x}{2} + 2$

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

15) $\frac{1}{4}x - \frac{3}{8}x = 5$

16) $\frac{2}{3} + \frac{x}{4} = \frac{11}{12}$

17) $\frac{1}{2} - \frac{x}{5} = \frac{7}{10}$

18) $\frac{x}{3} - 6 = \frac{x}{2} - 1$

Solve the equation. Use words or set notation to identify equations that have no solution, or equations that are true for all real numbers.

19) $2(x + 6) = 2x - 24$

20) $3(x + 3) = 3x - 18$

21) $2(x + 5) = 2x - 20$

22) $2(x + 5) = 2x + 10$

23) $3(x + 7) = 3x + 21$

24) $3(x + 5) = 3x + 15$

25) $-6(x + 3) + 102 = 2x - 8(x - 9)$

26) $6(x + 4) + 57 = 9x - 3(x - 3)$

27) $2(x - 1) + 13 = 7x - 5(x - 5)$

28) $24(x - 1) = 6(4x + 4) - 48$

29) $4(x + 4) = 4x - 32$

30) $15(x + 1) = 38x + 38 - 23x - 23$

Use the given information to write an equation. Let x represent the number described in the exercise. Then solve the equation and find the number.

31) Four times a number added to 7 times the number equals 55. Find the number.

32) Four times a number added to 9 times the number equals 52. Find the number.

33) Four times a number added to 9 times the number equals 65. Find the number.

34) When 4 times a number is subtracted from 7 times the number, the result is 30. Find the number.

35) When 3 times a number is subtracted from 7 times the number, the result is 28. Find the number.

36) When 3 times a number is subtracted from 7 times the number, the result is 36. Find the number.

37) If 4 times a number is added to −5, the result is equal to 9 times the number. Find the number.

38) If 6 times a number is added to −6, the result is equal to 12 times the number. Find the number.

39) If 3 times a number is added to −8, the result is equal to 11 times the number. Find the number.

40) Three–fourths of a number is $\frac{1}{2}$. Find the number in lowest terms.

41) Three–fourths of a number is $\frac{3}{16}$. Find the number in lowest terms.

42) Three–fourths of a number is $\frac{7}{8}$. Find the number in lowest terms.

43) The sum of four times a number and 5 is equal to the difference of twice the number and 3. Find the number.

44) The sum of four times a number and 9 is equal to the difference of twice the number and 8. Find the number.

45) The sum of four times a number and 9 is equal to the difference of twice the number and 10. Find the number.

46) Four times a number added to 7 times the number equals 33. Find the number.

47) If 6 times a number is added to –5, the result is equal to 11 times the number. Find the number.

48) Three–fourths of a number is $\frac{5}{6}$. Find the number in lowest terms.

Let x represent the number. Write the English phrase as an algebraic expression.

49) The product of 17 and a number, added to 10.

50) The product of 7 and a number, added to 12.

51) Three times a number, decreased by 30.

52) Seven times a number, decreased by 45.

53) The quotient of 37 and the product of a number and –8.

54) The quotient of 38 and the product of a number and –8.

55) The product of –23 and the sum of a number and 33.

56) The product of –5 and the sum of a number and 37.

57) The product of –21 and the sum of a number and 20.

58) Four times a number, decreased by 17.

59) The product of 17 and a number, added to 11.

Solve the problem.

60) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is $290,000, find each worker's salary.

61) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is $280,000, find each worker's salary.

62) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is $220,000, find each worker's salary.

63) 30 marbles are to be divided into three bags so that the second bag has three times as many marbles as the first bag and the third bag has twice as many as the first bag. If x is the number of marbles in the first bag, find the number of marbles in each bag.

64) 30 marbles are to be divided into three bags so that the second bag has three times as many marbles as the first bag and the third bag has twice as many as the first bag. If x is the number of marbles in the first bag, find the number of marbles in each bag.

65) 30 marbles are to be divided into three bags so that the second bag has three times as many marbles as the first bag and the third bag has twice as many as the first bag. If x is the number of marbles in the first bag, find the number of marbles in each bag.

66) A promotional deal for long distance phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $54 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary.

67) A promotional deal for long distance phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $74 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary.

68) A promotional deal for long distance phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $56 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary.

69) A car rental agency advertised renting a luxury, full–size car for $24.95 per day and $0.19 per mile. If you rent this car for 5 days, how many whole miles can you drive if you only have $200 to spend?

70) A car rental agency advertised renting a luxury, full–size car for $29.95 per day and $0.29 per mile. If you rent this car for 5 days, how many whole miles can you drive if you only have $200 to spend?

71) A car rental agency advertised renting a luxury, full–size car for $19.95 per day and $0.29 per mile. If you rent this car for 2 days, how many whole miles can you drive if you only have $200 to spend?

1) {75}
2) {60}
3) {60}
4) {45}
5) {–16}
6) {–24}
7) {–32}
8) $\{-6\}$
9) $\left\{\frac{5}{4}\right\}$
10) $\{-2\}$
11) $\left\{-\frac{75}{2}\right\}$
12) $\{-144\}$
13) $\{-48\}$
14) {30}
15) {–40}
16) $\{1\}$
17) $\{-1\}$
18) $\{-30\}$
19) ∅
20) ∅
21) ∅
22) {x | x is a real number}
23) {x | x is a real number}
24) {x | x is a real number}
25) ∅
26) ∅
27) ∅
28) {x | x is a real number}
29) ∅
30) {x | x is a real number}
31) $4x + 7x = 55$; 5
32) $4x + 9x = 52$; 4
33) $4x + 9x = 65$; 5
34) $7x - 4x = 30$; 10
35) $7x - 3x = 28$; 7
36) $7x - 3x = 36$; 9
37) $4x + (-5) = 9x$; –1
38) $6x + (-6) = 12x$; –1
39) $3x + (-8) = 11x$; –1
40) $\frac{3}{4}x = \frac{1}{2}$; $\frac{2}{3}$
41) $\frac{3}{4}x = \frac{3}{16}$; $\frac{1}{4}$
42) $\frac{3}{4}x = \frac{7}{8}$; $\frac{7}{6}$
43) $4x + 5 = 2x - 3$; – 4

44) $4x + 9 = 2x - 8$; $-\frac{17}{2}$

45) $4x + 9 = 2x - 10$; $-\frac{19}{2}$

46) $4x + 7x = 33$; 3

47) $6x + (-5) = 11x$; -1

48) $\frac{3}{4}x = \frac{5}{6}$; $\frac{10}{9}$

49) $10 + 17x$

50) $12 + 7x$

51) $3x - 30$

52) $7x - 45$

53) $\frac{37}{-8x}$

54) $\frac{38}{-8x}$

55) $-23(x + 33)$

56) $-5(x + 37)$

57) $-21(x + 20)$

58) $4x - 17$

59) $11 + 17x$

60) president's salary = $217,500; department head's salary = $72,500

61) president's salary = $210,000; department head's salary = $70,000

62) president's salary = $165,000; department head's salary = $55,000

63) 1st bag = 5 marbles; 2nd bag = 15 marbles; 3rd bag = 10 marbles

64) 1st bag = 5 marbles; 2nd bag = 15 marbles; 3rd bag = 10 marbles

65) 1st bag = 5 marbles; 2nd bag = 15 marbles; 3rd bag = 10 marbles

66) 780 minutes

67) 1180 minutes

68) 820 minutes

69) 396 miles

70) 173 miles

71) 552 miles