Math 93–Review for Final Exam–page 1

Simplify.

1. $30 + (-16)$
2. $-24 + (-48)$
3. $-49 + 21$
4. $-55 + 17 + (-39) + 29$
5. $17 - 50$
6. $-32 - 49$
7. $-43 - (-38)$
8. $-59 - (-68)$
9. $12 - (-25)$
10. $63 - 78 + (-3) - (-12)$
11. $8(-6)$
12. $-9(10)(-2)$
13. $-14 \div 2 + 7(10 - 12)$
14. $8(-3) + 2(7 - 10)^2$
15. $24 - (-9 + 1) - 4^2$
16. $48 - 2(5 - 7^2) + 18 \div (-2)$
17. $8z + 13 - 12z + 6$
18. $6(4m + 5) - 2(3m - 8)$
19. $-31x - (19x - 25) + 16 + 9(x + 3)$

Solve.

20. $m + 25 = 32$
21. $z - 11 = 28$
22. $5y = 40$
23. $y + 18 = 2$
24. $x - 15 = -2$
25. $a + 28 = -9$
26. $-4k = -20$
27. $-3m + 39 = 57$
28. $5z - 20 = -55$
29. $2y + 6 = 8y - 42$
30. $5a + 2 + 3a + 22 = 8$
31. $3(2x+ 4) - 4(4x - 5) = 2$
32. $9(2m - 4) = 5(4m - 6)$
33. $2m + 5 = 12$
34. $4k + 12 = -2k - 5$
35. $3(4w + 5) = 1$
36. $x + \frac{5}{9} = \frac{1}{6}$
37. $\frac{3}{4}x + \frac{1}{6} = \frac{1}{2}$
38. $\frac{1}{4}y + 2 = -3$
39. $8k + 30 + 2k - 45 = 17 + 14k - 60 - 5k$
40. $0.04z + 1.04 = 8.2$

Simplify.

41. $3x^2 + 9x - 17 + 2x^2 - 7x + 3$
42. $(6a^2 - 7a + 11) - (4a^2 - 6a - 3)$
43. $(2x + 7)(x - 9)$
44. $(4x - 2)(5x - 1)$
45. $m^3 \cdot m^2 \cdot m \cdot m^8$
46. $4y^2(7y^5)$
47. $(-8a^9)(4a^3b^4)$
48. $(x^5)^4$
49. $(3x^4 y z^3)^2$
50. $(x^3)^4 (x^2)^5$

Simplify.

51. $\frac{36yz^8}{40y^4z^3}$

52. $\frac{-3m}{4}+\frac{5m}{6}$

53. $4\frac{4}{5} - 6\frac{1}{2}$

54. $-1\frac{1}{2}\left(-3\frac{1}{5}\right)$

Evaluate.

55. $6m + 25$ when $m = -7$

56. $2x^2 + 5x + 11$ for $x = 3$

Choose the appropriate formula and find the answer.

57. A rectangle has a length 10 feet and width 7 feet.
    a. find the perimeter
    b. find the area

58. Find the area of a triangle with base 12 cm and height 9 cm.

59. A circle has a radius of 4 inches.
    a. find the circumference
    b. find the area

60. Find the volume of a rectangular solid with length 9 inches, width 7 inches, and height 4 inches.

Plot the following points.

61. (5, 4) 62. (-3, 2) 63. (1, -6) 64. (-5, -3)

Show your table of values. Graph.

65. $y = 2x + 3$ 66. $y = 3x - 4$ 67. $y = -x + 4$

68. $y = -2x$

Set up and solve.

69. Joe's bank balance increased by $1235 is $3948. Find Joe's bank balance.

70. If Glenn owns 12 trees more than twice what Mary does, and together they own 72 trees, how many does each one own?

71. In November, 200 people bought tickets to a play. Then 16 people had to return the tickets for a refund. What percent of the people returned their tickets for a refund?

Answer Key.

1. 14
2. -72
3. -28
4. -48
5. -33
6. -81
7. -5
8. 9
9. 37
10. -6
11. -48
12. 180
13. -21
14. -6
15. 16
16. 127
17. $-4z + 19$
18. $18m + 46$
19. $-41x + 68$
20. $m = 7$
21. $z = 39$
22. $y = 8$
23. $y = -16$
24. $x = 13$
25. $a = -37$
26. $k = 5$
27. $m = -6$
28. $z = -7$
29. $y = 8$
30. $a = -2$
31. $x = 3$
32. $m = -3$
33. $m = \frac{7}{2}$
34. $x = -\frac{17}{6}$
35. $w = -\frac{7}{6}$
36. $x = -\frac{7}{18}$
37. $x = \frac{4}{9}$
38. $y = -20$
39. $k = -28$
40. $z = 179$
41. $5x^2 + 2x - 14$
42. $2a^2 - a + 14$
43. $2x^2 - 11x - 63$
44. $20x^2 - 14x + 2$
45. m^{14}
46. $28y^7$
47. $-32a^{12}b^4$
48. x^{20}
49. $9x^8 y^2 z^6$
50. x^{22}
51. $\frac{9z^5}{10y^3}$
52. $\frac{m}{12}$
53. $-\frac{17}{10}$ *or* $-1\frac{7}{10}$
54. $\frac{24}{5}$ *or* $4\frac{4}{5}$
55. -17
56. 44

57a. P = 34 feet
57b. A = 70 square feet

58. A = 54 sq cm

59a. C = 25.12 in
59b. A = 50.24 square inches

60. V = 252 cu in

61-68, also see graphs at the end

61. (5, 4) move 5 right and then 4 up; located in 1st quadrant

62. (-3, 2) move 3 left and then 2 up; located in 2nd quadrant

63. (1, -6) move 1 right and then 6 down; located in 4th quadrant

64. (-5, -3) move 5 left and then 3 down; located in 3rd quadrant

65. y = 2x + 3

x	y
0	3
1	5
2	7

66. y = 3x - 4

x	y
0	-4
1	-1
2	2

67. y = -x + 4

x	y
0	4
1	3
2	2

68. y = -2x

x	y
0	0
1	-2
2	-4

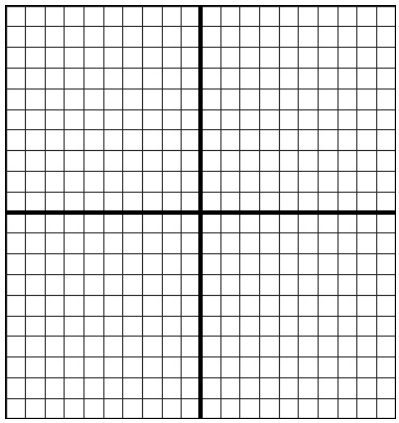
69. x = Joe's bank balance
x + 1235 = 3948
solve!
x = 2713
Joe's bank balance is $2713.

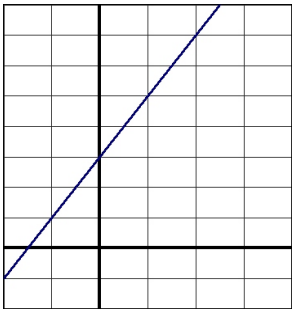
70. x = Mary's trees
2x + 12 = Glenn's trees
Mary + Glenn = 72
(x) + (2x + 12) = 72
solve!
x = 20
Mary owns 20 trees; Glenn owns 52 trees.

71. x = percent
200 = whole
16 = part

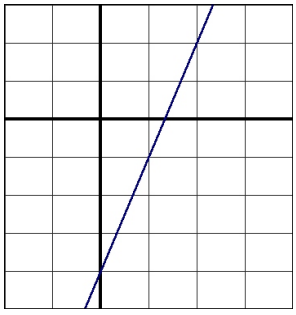
x(200) = 16
solve!
x = 0.08 = 8%
8% of the people returned their tickets for a refund.

65. $y = 2x + 3$

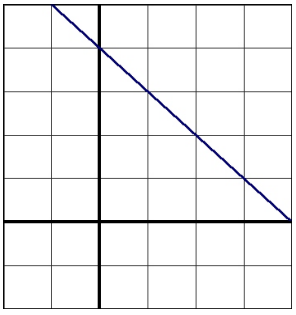




66. $y = 3x - 4$



67. $y = -x + 4$



68. $y = -2x$