

# Math 0989 Final Exam Review Packet

This study guide provides a good review of most of the topics in the course, but do not use it as your only review source. Seek help on any problems you cannot solve. The key at the end of this document lists the module for each question, so you can use ALEKS to get more practice on specific topics.

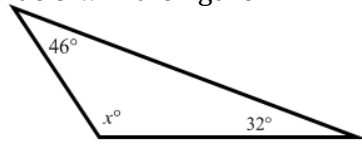
This packet contains three "practice final exams", each with 40 questions. One way to study is to take one practice final exam as though it was the real final exam: give yourself two hours, use a calculator but do not use notes or any other help. Then look at the key to see how you did. Study what you got wrong, and then try another practice exam.

## Practice Final Exam #1

- Evaluate  $\frac{3(8+5)+3 \cdot 3}{3(5-1)}$ 
  - 4
  - 3
  - $\frac{6}{7}$
  - $\frac{7}{2}$
- Evaluate the expression  $\frac{6}{0}$ 
  - 6
  - 0
  - undefined
- The system  $\begin{cases} 5x - 3y = -15 \\ x + y = -3 \end{cases}$  has
  - One solution
  - No solution
  - Infinitely many solutions
- Use a calculator to find the value of the root. Round to the nearest hundredth.  
 $\sqrt{38}$ 
  - 6
  - 6.16
  - 38
  - 1444
- Evaluate  $4x^2 - 2x + 1$  if  $x = -3$ 
  - 3
  - 151
  - 43
  - 29
- Simplify the expression.  
 $-4(2a^2 - 5a + 3) + 3(-a^2 + 8a - 1)$ 
  - $-11a^2 + 44a - 15$
  - $-11a^2 - 4a - 15$
  - $-11a^2 + 4a + 9$
  - $-11a^2 + 23a + 2$
- Solve for  $x$ . Simplify your answer as much as possible.  
 $3x - 5 = 2(x + 1) + x$ 
  - $x = 1$
  - $x = \frac{7}{6}$
  - $x = 7$
  - No solution
- Given the figure below, find the value of  $x$ .
  - 20
  - 80
  - 12.5
  - 50
- A line passes through the point  $(4, 1)$  and has a slope of  $-2$ . Write an equation in slope-intercept form for this line.
  - $y = -2x + 7$
  - $y = -2x + 9$
  - $y = -2x$
  - $y = 2x - 9$

10. Find the value of
- $x$
- in the figure.

- a. 12  
b. 14  
c. 78  
d. 102



11. Solve the inequality for
- $x$
- . Simplify your answer as much as possible.

$$2x - 18 > 3(3x - 13)$$

- a.  $[3, \infty)$   
b.  $(-\infty, 3]$   
c.  $(3, \infty)$   
d.  $(-\infty, 3)$

12. Evaluate.
- $10^4$

- a. 100  
b. 1,000  
c. 10,000  
d. 100,000

13. Rewrite as a power of ten.

$$\frac{1}{10,000}$$

- a.  $10^{-6}$   
b.  $10^{-5}$   
c.  $10^{-4}$   
d. 10

14. Simplify:
- $\sqrt{72}$

- a.  $36\sqrt{2}$   
b.  $6\sqrt{2}$   
c.  $2\sqrt{36}$   
d.  $3\sqrt{8}$

15. Find the greatest common factor of these three expressions.

$$35v, 5v^3, \text{ and } 70v^4$$

- a.  $5v^4$   
b.  $5v^3$   
c.  $5v$   
d.  $70v^4$

16. A piece of pipe is 50 inches long. It is cut into two pieces. The shorter piece is 10 inches shorter than the longer piece. An equation that models this problem, where
- $x$
- is the length of the longer piece, is

- a.  $x + 10 + x = 50$   
b.  $x - 10 + x = 50$   
c.  $x + 10 - x = 50$   
d.  $x - 10 - x = 50$

17. A rectangular garden is 25 ft wide. If its area is 1200 ft
- <sup>2</sup>
- , what is the length of the garden?

- a. 25 feet  
b. 48 feet  
c. 40 feet  
d. 36 feet

18. The length of a rectangle is three times its width. If the area of the rectangle is 108 ft
- <sup>2</sup>
- , find its perimeter.

- a. 6 ft  
b. 24 ft  
c. 48 ft  
d. 36 ft

19. Rewrite in slope-intercept form.

$$4x - 3y = 0$$

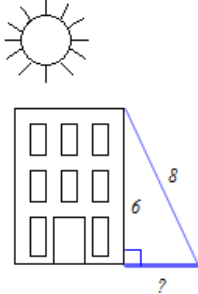
- a.  $y = \frac{3}{4}x$   
b.  $y = -\frac{3}{4}x$   
c.  $y = \frac{4}{3}x$   
d. The equation cannot be written in slope-intercept form.

20. Rewrite without parentheses and simplify.

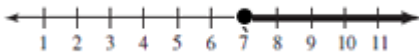
$$(4x - 1)(3x + 5)$$

- a.  $7x - 5$   
b.  $39x^2 - 5$   
c.  $12x^2 - 5$   
d.  $12x^2 + 17x - 5$

21. A 6 m tall building casts a shadow. The distance from the top of the building to the tip of the shadow is 8 m. Find the length of the shadow. Round your answer to the nearest tenth.



- a.  $x = 28$  m  
 b.  $x = 5.3$  m  
 c.  $x = 10$  m  
 d.  $x = 100$  m
22. Factor completely.  
 $x^2 + 7x + 6$
- a.  $(x + 6)(x + 1)$   
 b.  $(x - 6)(x - 1)$   
 c.  $(x + 7)(x + 1)$   
 d.  $(x + 3)(x + 4)$
23. Write an inequality for the graph shown below. Use  $x$  for your variable.



- a.  $x \geq 7$   
 b.  $x > 7$   
 c.  $x < 7$   
 d.  $x \leq 7$
24. One of the prime factors of  $3x^2 - 5x - 2$  is
- a.  $(3x - 2)$   
 b.  $(3x - 1)$   
 c.  $(x - 2)$   
 d. Cannot be factored

25. Find the least common denominator of  $\frac{14}{25a^3}$  and  $\frac{8}{a-5}$

- a.  $25a^4 - 5$   
 b.  $a$   
 c.  $a - 5$   
 d.  $25a^3(a - 5)$

26. Write an equation in slope-intercept form for the line with slope -4 and y-intercept 5.

- a.  $y = -4x - 5$   
 b.  $y = -4x + 5$   
 c.  $y = 5x + 4$   
 d.  $y = 5x - 4$

27. Simplify:  $\left(\frac{2t^2}{t-5}\right)^3$

Write your answer with a positive exponent only.

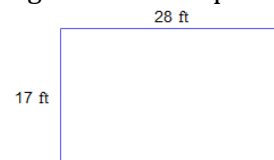
- a.  $\frac{2}{t^9}$   
 b.  $8t^9$   
 c.  $8t^{21}$   
 d.  $6t^{10}$

28. Solve for  $x$ .

$$\frac{2x}{3} + \frac{2x}{5} = \frac{64}{15}$$

- a.  $x = 16$   
 b.  $x = 3$   
 c.  $x = 5$   
 d.  $x = 4$

29. The figure below shows a rectangular lawn. The lot would be surrounded by a rope. Which measure would be used in finding how much rope is needed?



- a. height  
 b. circumference  
 c. area  
 d. perimeter

30. The following two lines are:

$$\begin{aligned} 9x + 3y &= 2 \\ x - 3y &= 5 \end{aligned}$$

- a. Parallel
- b. Perpendicular
- c. Neither parallel nor perpendicular

31. Write the number in scientific notation.

$$0.000046271$$

- a.  $46.271 \times 10^6$
- b.  $46.271 \times 10^{-6}$
- c.  $4.6271 \times 10^{-5}$
- d.  $4.6271 \times 10^5$

32. Solve for  $x$ .

$$\frac{3}{x-1} + \frac{1}{x} = \frac{7}{2}$$

- a.  $x = \frac{1}{7}$
- b.  $x = 2$
- c.  $x = \frac{1}{7}, 2$
- d.  $x = \frac{1}{2}, 7$

33. Choose the value(s) for which  $\frac{m-2}{m-7}$  is undefined.

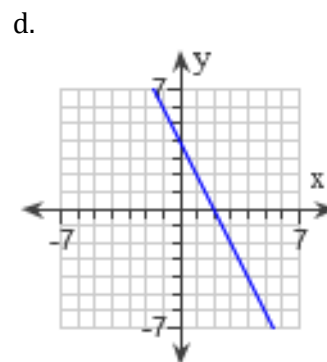
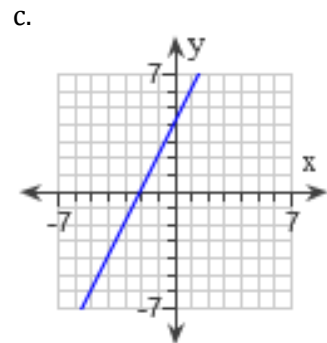
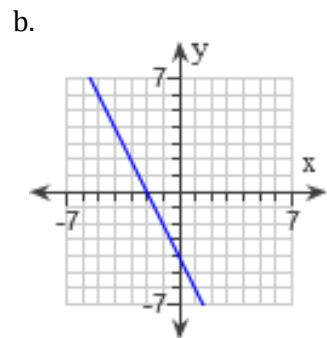
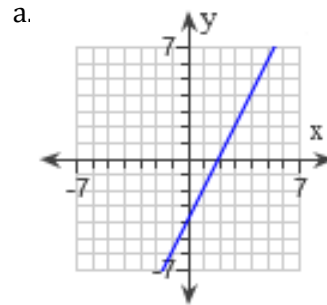
- a. 7
- b. 7 and 2
- c. 2
- d. Never undefined

34. Write the equation of the horizontal line passing through the point (2,4).

- a.  $y = 4$
- b.  $x = 4$
- c.  $y = 2$
- d.  $x = 2$

35. Graph the line.

$$y = 2x + 4$$



36. Solve for  $x$ , where  $x$  is a real number.  
Simplify your answer as much as possible.

$$(3x + 3)^2 = 36$$

- a.  $x = -3, 1$   
 b.  $x = 0, 1$   
 c.  $x = -13, 13$   
 d.  $x = 1, 3$
37. Solve for  $x$ .  $4x^2 - 12x - 40 = 0$
- a.  $x = -4, 10$   
 b.  $x = -10, 4$   
 c.  $x = -2, 5$   
 d.  $x = -5, 2$

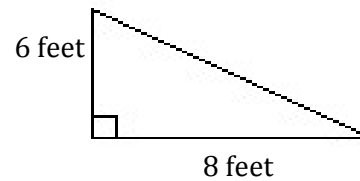
38. Translate this phrase into an algebraic expression.

*Four less than the quotient of a number and 7.*

Use the variable  $n$  to represent the unknown number.

- a.  $\frac{4}{n} + 7$   
 b.  $4 < \frac{n}{7}$   
 c.  $\frac{n}{7} - 4$   
 d.  $4 - \frac{n}{7}$

39. Find the area of the triangle below.



- a.  $48 \text{ ft}^2$   
 b.  $24 \text{ ft}^2$   
 c.  $24 \text{ ft}$   
 d.  $48 \text{ ft}$
40. Find all real solutions of  
 $5m^2 + 5m - 1 = 0$   
 by using the quadratic formula.

- a.  $x = \frac{-1-3\sqrt{5}}{2}, \frac{-1+3\sqrt{5}}{2}$   
 b.  $x = \frac{5-3\sqrt{5}}{10}, \frac{5+3\sqrt{5}}{10}$   
 c.  $x = \frac{-5-3\sqrt{5}}{10}, \frac{-5+3\sqrt{5}}{10}$   
 d.  $x = \frac{1-3\sqrt{5}}{2}, \frac{1+3\sqrt{5}}{2}$

## Practice Final Exam #2

41. Evaluate the expression.  $8 \div 0$ 

- a. 0
- b. 8
- c. undefined

42. Solve for  $x$ .  $x^2 - 7x = -6$ 

- a.  $x = 1, 6$
- b.  $x = -6, -1$
- c.  $x = 1$
- d.  $x = 2, 3$

43. Find the  $x$ -intercept of the line.

$$y = -5x + 10$$

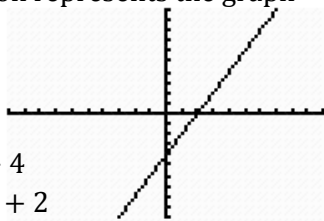
- a. (0,2)
- b. (2,0)
- c. (10,0)
- d. (0,10)

44. Find the  $y$ -intercept of the line.

$$3x - 6y = 3$$

- a. (0,1)
- b. (1,0)
- c.  $(-\frac{1}{2}, 0)$
- d.  $(0, -\frac{1}{2})$

45. Which equation represents the graph below?



- a.  $y = 2x - 4$
- b.  $y = -4x + 2$
- c.  $y = -2x + 4$
- d.  $y = 4x - 2$

46. Solve for  $w$ .

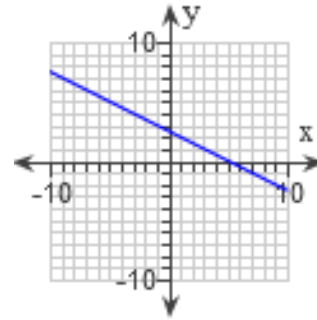
$$3(w - 2) + w = 1 - 2(3 - w)$$

- a.  $\frac{1}{2}$
- b. 2
- c. No solution
- d. All real numbers are solutions

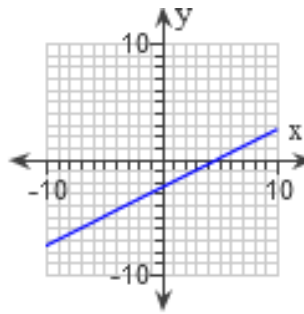
47. Graph the line.

$$2x - 4y = 10$$

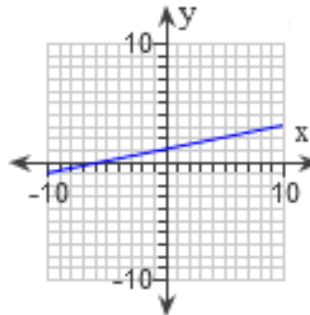
a.



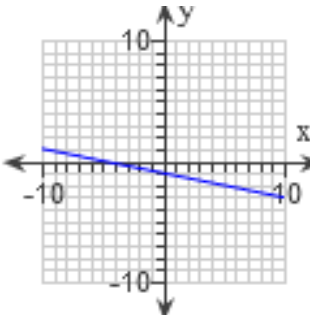
b.



c.

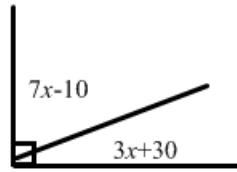


d.



48. Given the figure below, find the value of  $x$ .

- a. 4
- b. 7
- c. 12.5
- d. 5



49. The equation of a line with an undefined slope passing through the point  $(-3, -4)$  is:

- a.  $y = -4$
- b.  $x = -3$
- c.  $y = 3$
- d.  $x = 4$

50. Write an equation in slope-intercept form for the line that passing through the points  $(4, -3)$  and  $(-2, 9)$ .

- a.  $y = -x - 7$
- b.  $y = -x + 1$
- c.  $y = -2x + 5$
- d.  $y = -3x + 3$

51. Solve for  $x$ . Simplify your answer as much as possible.

$$4(2x - 3) = 5 - 7x$$

- a.  $x = \frac{17}{15}$
- b.  $x = \frac{15}{17}$
- c.  $x = 17$
- d.  $x = -7$

52. Write an equation in slope-intercept form for the line that passing through the points  $(2, 3)$  and  $(4, 9)$

- a.  $y = 3x - 9$
- b.  $y = 3x - 3$
- c.  $y = \frac{1}{3}x + \frac{7}{3}$
- d.  $y = \frac{1}{3}x - \frac{11}{3}$

53. The following two lines are:

$$4x + 2y = 8$$

$$6x + 3y = -3$$

- a. Parallel
- b. Perpendicular
- c. Neither parallel nor perpendicular

54. Use a calculator to find the value of the following root.  $\sqrt{6561}$

- a. 3
- b. 9
- c. 81
- d. 3280.5

55. When simplified,  $\frac{\left(\frac{2}{y^3}\right)^2}{\frac{7}{y^3}}$  becomes

- a.  $y$
- b.  $\frac{1}{y}$
- c.  $y^2$
- d.  $y^{\frac{10}{3}}$

56. Solve the inequality for  $x$ . Simplify your answer as much as possible.

$$4x + 5 < 29$$

- a.  $(-\infty, 6]$
- b.  $(6, \infty)$
- c.  $(-\infty, 6)$
- d.  $[6, \infty)$

57. Rewrite as a power of ten.

$$100,000,000$$

- a. 10
- b.  $10^6$
- c.  $10^7$
- d.  $10^8$

58. Solve the following equation for  $y$ .

$$2x + 7y = 7$$

- a.  $y = -\frac{2}{7}x + 1$
- b.  $y = \frac{2}{7}x + 1$
- c.  $y = -\frac{2}{7}x + 7$
- d.  $y = -\frac{2}{7}x - 7$

59. The following two lines are:

$$4x + 2y = 7$$

$$5x + 3y = 11$$

- a. Parallel  
 b. Perpendicular  
 c. Neither parallel nor perpendicular

60. The system
- $\begin{cases} 2x - 3y = 7 \\ -4x + 6y = 14 \end{cases}$
- has

- a. Two solutions  
 b. One solution  
 c. No solution  
 d. Infinitely many solutions

61. The system
- $\begin{cases} 2x - 12y = 15 \\ 4x - 24y = 30 \end{cases}$
- has

- a. Two solutions  
 b. One solution  
 c. No solutions  
 d. Infinitely many solutions

62. The statement which is
- not**
- correct is:

- a.  $-|-4| = -4$   
 b.  $-(-1)^4 = -1$   
 c.  $(-7)^0 = 1$   
 d.  $-4^0 = 1$

63. A rope 86 inches long is cut into two pieces. The long piece is 5 inches more than twice the shorter piece. What is the length of the shorter piece?

- a. 27 inches  
 b. 48 inches  
 c. 40.5 inches  
 d. 59 inches

64. Find the least common denominator of

$$\frac{7}{p} \text{ and } \frac{15}{p-2}$$

- a.  $p$   
 b.  $-2$   
 c.  $p(p-2)$   
 d.  $7p(p-2)$

65. Translate this phrase into an algebraic expression.

*Six more than the product of 12 and a number.*

Use the variable  $n$  to represent the unknown number.

- a.  $6 + 12n$   
 b.  $6n + 12$   
 c.  $6 * 12n$   
 d.  $6 + 12 + n$

66. Solve for
- $a$
- , where
- $a$
- is a real number. Simplify your answer as much as possible.

$$(a - 7)^2 = 20$$

- a.  $a = -2\sqrt{5}, 2\sqrt{5}$   
 b.  $a = 7 - 2\sqrt{10}, 7 + 2\sqrt{10}$   
 c.  $a = 7 - 2\sqrt{5}, 7 + 2\sqrt{5}$   
 d.  $a = 2\sqrt{5} - 7, 2\sqrt{5} + 7$

67. For the system of equations given below, choose the best description of its solution.

$$\begin{cases} 9x + 12y = -81 \\ -3x + 4y = 27 \end{cases}$$

- a. The system has a unique solution  $(x, y) = (-9, 0)$   
 b. The system has a unique solution  $(x, y) = \left(0, \frac{27}{4}\right)$   
 c. The system has infinitely many solutions that must satisfy the following equation:  $y = -\frac{3}{4}x - \frac{27}{4}$   
 d. The system has no solution



68. Simplify  $(3x^2)(9x^{-6})$ .

Write your answer with a positive exponent only.

a.  $\frac{x^4}{3}$

b.  $\frac{3}{x^4}$

c.  $27x^4$

d.  $\frac{27}{x^4}$

69. For the system of equations given below, choose the best description of its solution. 
$$\begin{cases} y = 4x - 9 \\ 3x - y = 6 \end{cases}$$

- a. The system has a unique solution  $(x, y) = (-3, 3)$
- b. The system has a unique solution  $(x, y) = (3, -3)$
- c. The system has a unique solution  $(x, y) = (3, 3)$
- d. The system has a unique solution  $(x, y) = (-3, -3)$

70. Simplify:  $\sqrt{27}$

a.  $3\sqrt{3}$

b.  $9\sqrt{3}$

c.  $3^3$

d.  $3\sqrt{9}$

71. Solve for  $m$ .  $\frac{8}{2m+4} + \frac{2}{3m+6} = \frac{7}{9}$

- a.  $m = 6$
- b.  $m = 4$
- c.  $m = 9$
- d.  $m = 3$

72. Choose the value for which  $\frac{2}{a+8}$  is undefined.

- a. 0
- b. -8
- c. 8
- d. Never undefined

73. Rewrite without exponents.  $(2b^3)^4$

a.  $2b^7$

b.  $16b^{12}$

c.  $2b^{12}$

d.  $16b^7$

74. When simplified  $2x^{\frac{7}{3}}5x^{-\frac{4}{3}}$  becomes:

a.  $32x$

b.  $10x^3$

c.  $32x^4$

d.  $10x$

75. When simplified,  $\frac{m^{3/4}}{m^{5/4}m^{-2}}$  becomes

a.  $m^{3/2}$

b.  $\frac{1}{m^2}$

c.  $\frac{1}{m^{3/2}}$

d.  $\frac{1}{m^{1/2}}$

76. One of the prime factors of  $x^2 - x - 12$  is

a.  $(x + 4)$

b.  $(x - 4)$

c.  $(x - 3)$

d. Cannot be factored

77. The length of a rectangle is 5 ft longer than its width. If the perimeter of the rectangle is 50 ft, find its area.

- a.  $30 \text{ ft}^2$
- b.  $150 \text{ ft}^2$
- c.  $50 \text{ ft}^2$
- d.  $15 \text{ ft}^2$

78. When simplified  $\frac{5x^3-10x}{5x^3}$  is equivalent to:

a.  $-2x$

b.  $1 - \frac{2}{x^2}$

c.  $1 - 2x$

d.  $-\frac{2}{x^2}$

79. Solve for  $x$ .  $x^2 + 4x + 3 = 0$

- a.  $x = -4, -3$
- b.  $x = -\frac{3}{5}$
- c.  $x = 1, 3$
- d.  $x = -3, -1$

80. Solve for  $x$ .  $2x^2 - 4x - 6 = 0$

- a.  $x = \frac{1}{3}, 1$
- b.  $x = -1, 3$
- c.  $x = 0, \frac{1}{3}$
- d.  $x = -1, \frac{1}{3}$

## Practice Final Exam #3

81. Solve for  $x$ , where  $x$  is a real number.  
Simplify your answer as much as possible.

$$x^2 = 25$$

- a.  $x = 6$   
b.  $x = 5$   
c.  $x = -5, 5$   
d.  $x = -12.5, 12.5$

82. Evaluate.  $6^3 \div 9 - 6$

- a. -4  
b. 213  
c. 18  
d. 72

83. Solve for  $x$ .  $x^3 - 9x = 0$

- a.  $x = -3, 0, 3$   
b.  $x = -3, 3$   
c.  $x = 0, 9$   
d.  $x = 0, 1, 9$

84. Evaluate.  $\frac{7(14-3^2)}{7 \cdot 4 \cdot 17}$

- a.  $\frac{95}{28}$   
b.  $\frac{5}{4}$   
c.  $\frac{68}{5}$   
d.  $\frac{5}{68}$

85. Solve the following equation for  $y$ .

$$4y = 3x + 7$$

- a.  $y = -\frac{3}{4}x - \frac{7}{4}$   
b.  $y = \frac{3}{4}x + \frac{7}{4}$   
c.  $y = \frac{3}{4x} + \frac{7}{4}$   
d.  $y = -\frac{3}{4}x - \frac{7}{4}$

86. Solve for  $m$ , where  $m$  is a real number.  
Simplify your answer as much as possible

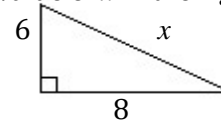
$$m^2 = 75$$

- a.  $m = 15$   
b.  $m = 3\sqrt{5}, -3\sqrt{5}$   
c.  $m = 3\sqrt{5}$   
d.  $m = 5\sqrt{3}, -5\sqrt{3}$

87. Evaluate the expression.  $\frac{0}{4}$

- a. undefined  
b. 4  
c. 0

88. The value of  $x$  in the right triangle is



- a. 12  
b. 14  
c. 2  
d. 10

89. Simplify  $\sqrt{5} \cdot \sqrt{15}$

- a. 75  
b.  $\sqrt{75}$   
c.  $5\sqrt{3}$   
d.  $3\sqrt{5}$

90. Translate this phrase into an algebraic inequality.

*One hundred is less than the difference of a number and 3.*

Use the variable  $n$  to represent the unknown number.

- a.  $100 < n - 3$   
b.  $100 < n + 3$   
c.  $n - 3 - 100$   
d.  $100 > n - 3$

91. Translate this phrase into an algebraic equation.

*Seventeen is 5 less than twice a number.*

Use the variable  $n$  to represent the unknown number.

- a.  $17 = 5 - 2n$   
b.  $17 < 2n - 5$   
c.  $17 = 2n - 5$   
d.  $17 - 5 = 2n$

92. Solve for  $x$ . Simplify your answer as much as possible.

$$5x - 2(3 - x) = 7x - 6$$

- a.  $x = 0$   
 b.  $x = 3$   
 c. No solution  
 d. All real numbers
93. Evaluate  $x^2 + 3x - 5$  if  $x = 2$
- a. 5  
 b. 2  
 c. -3  
 d. 15
94. Evaluate.  $10^{-3}$
- a.  $\frac{1}{10}$   
 b.  $\frac{1}{100}$   
 c.  $\frac{1}{1,000}$   
 d.  $\frac{1}{10,000}$
95. The system  $\begin{cases} 3x + y = 6 \\ 6x + 2y = -4 \end{cases}$  has
- a. One solution  
 b. No solution  
 c. Infinitely many solutions  
 d. Two solutions
96. The  $y$ -coordinate of the solution for the system  $\begin{cases} x + y = 3 \\ -3x + 2y = -19 \end{cases}$  is
- a. 5  
 b. 2  
 c. -5  
 d. -2

97. Choose the value for which  $\frac{a-4}{6}$  is undefined.

- a. 4  
 b. -4  
 c. 0  
 d. Never undefined

98. Find the least common denominator of

$$\frac{4}{5r-25} \text{ and } \frac{7}{15r-5}$$

- a.  $(5r - 25)(15r - 5)$   
 b.  $5(r - 5)(3r - 1)$   
 c.  $25(r - 5)(3r - 1)$   
 d.  $(r - 5)(3r - 1)$

99. Simplify the expression.

$$-7a + a(2a - 5)$$

- a.  $-6a^2$   
 b.  $2a^2 - 7a - 5$   
 c.  $-12a^2 + 30a$   
 d.  $2a^2 - 12a$

100. Solve the inequality for  $c$ . Simplify your answer as much as possible.

$$7c + 10 \leq 6c - 2$$

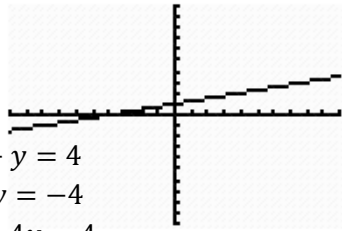
- a.  $(-\infty, -12]$   
 b.  $[-12, \infty)$   
 c.  $(7, \infty)$   
 d.  $(-\infty, 7)$

101. Solve for  $x$ .

$$\frac{4}{x} + \frac{1}{3} = 2$$

- a.  $x = \frac{12}{5}$   
 b.  $x = 0$   
 c.  $x = \frac{5}{12}$   
 d. No solution

102. Which equation represents the graph below?



- a.  $-x + y = 4$   
 b.  $x + y = -4$   
 c.  $-x + 4y = 4$   
 d.  $x + 4y = 16$
103. Find the greatest common factor of these three expressions.

$$15x^2, 3x^5, \text{ and } 36x^3$$

- a.  $3x^2$   
 b.  $3x^3$   
 c.  $3x^5$   
 d.  $105x^5$
104. Find the slope for the line passing through the points  $(2, -5)$  and  $(-4, 3)$
- a.  $-\frac{3}{4}$   
 b.  $-\frac{4}{3}$   
 c.  $\frac{1}{3}$   
 d.  $3$
105. Solve the inequality for  $w$ . Write the solution set using interval notation.

$$2 - 9w < 14 - 6w$$

- a.  $(-4, \infty)$   
 b.  $(-\infty, -4)$   
 c.  $[4, \infty)$   
 d.  $(-\infty, 4]$
106. Solve the inequality for  $x$ . Write the solution set using interval notation.
- $$5x + 3 \leq -12$$

- a.  $(3, \infty)$   
 b.  $[3, \infty)$   
 c.  $(-\infty, -3]$   
 d.  $(-\infty, -3)$

107. If two is subtracted from four times a number, the result is three more than six times the number. An equation that models this problem, where  $x$  is the unknown, is:

- a.  $4x - 2 + 3 + 6x = 0$   
 b.  $2 - 4x + 3 + 6x = 0$   
 c.  $2 - 4x = 3 + 6x$   
 d.  $4x - 2 = 6x + 3$

108. Write the number in scientific notation. 7,250,000,000

- a.  $7.25 \times 10^9$   
 b.  $7.25 \times 10^{-9}$   
 c.  $72.5 \times 10^{-8}$   
 d.  $72.5 \times 10^8$

109. Simplify:  $\left(\frac{x^3}{6}\right)^{-2}$

Write your answer with a positive exponent only.

a.  $\frac{x^6}{36}$

b.  $\frac{36}{x^6}$

c.  $\frac{x^5}{12}$

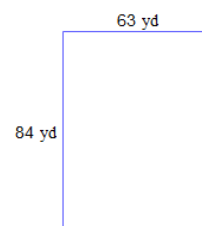
d.  $\frac{12}{x^5}$

110. Find the  $x$ -intercept of the line.

$$6x - y = 6$$

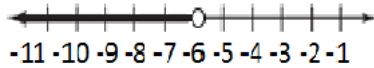
- a.  $(-6, 0)$   
 b.  $(1, 0)$   
 c.  $(0, -6)$   
 d.  $(0, 1)$

111. The figure below shows a rectangular parking lot. The lot would be paved. Which measure would be used in finding the amount of pavement needed?

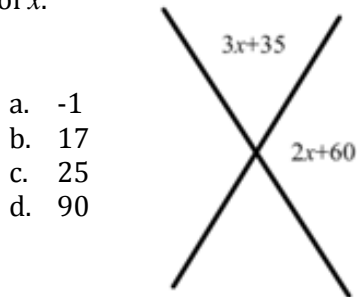


- a. height  
 b. circumference  
 c. area  
 d. perimeter

112. Write an inequality for the graph shown below. Use  $x$  for your variable.



- a.  $x \geq -6$   
 b.  $x > -6$   
 c.  $x < -6$   
 d.  $x \leq -6$
113. Given the figure below, find the value of  $x$ .



- a. -1  
 b. 17  
 c. 25  
 d. 90
114. Rewrite without parentheses and simplify.

$$(5x - 2)^2$$

- a.  $25x^2 - 4$   
 b.  $25x^2 + 4$   
 c.  $25x^2 - 20x + 4$   
 d.  $25x^2 + 20x - 4$
115. What is the value of:  $\sqrt{64}$

- a.  $16\sqrt{4}$   
 b.  $4\sqrt{16}$   
 c.  $4^3$   
 d. 8

116. Factor completely.

$$2x^2 - 13x + 15$$

- a.  $(2x - 3)(2x - 5)$   
 b.  $(2x - 3)(x - 5)$   
 c.  $2(x - 3)(x - 5)$   
 d.  $(2x - 5)(x - 3)$

117. A line has a slope of  $-\frac{4}{7}$  and passes

through the point  $(14, -6)$ . Write an equation in slope-intercept form for this line.

- a.  $y = -\frac{4}{7}x + 2$   
 b.  $y = -\frac{4}{7}x - 2$   
 c.  $y = -\frac{4}{7}x + 14$   
 d.  $y = -\frac{4}{7}x - 14$

118. Factor completely.

$$x^3 - 9x^2$$

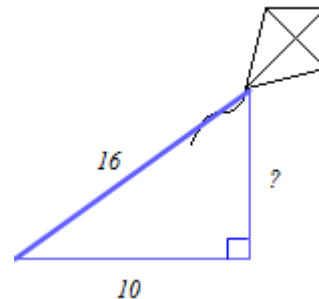
- a.  $x(x + 3)(x - 3)$   
 b.  $x(x - 9)$   
 c.  $x^2(x + 3)(x - 3)$   
 d.  $x^2(x - 9)$

119. Evaluate the expression.

$$0 \div 5$$

- a. 0  
 b. 5  
 c. undefined

120. A kite flying in the air has a 16 ft. line attached to it. Its line is pulled taut and casts a 10 ft. shadow. Find the height of the kite. Round your answer to the nearest tenth.



- a.  $x = 12.5$   
 b.  $x = 18.9$   
 c.  $x = 356$   
 d.  $x = 156$

KEY

Correct answer (ALEKS module)

Practice Final Exam #1

1. A (M1)
2. C (M1)
3. A (M6)
4. B (M2)
5. C (M3)
6. A (M3)
7. D (M3)
8. A (M4)
9. B (M5)
10. D (M4)
11. D (M4)
12. C (M1)
13. C (M7)
14. B (M7)
15. C (M8)
16. B (M6)
17. B (M4)
18. C (M6)
19. C (M5)
20. D (M8)
21. B (M4)
22. A (M8)
23. A (M4)
24. C (M8)
25. D (M10)
26. B (M5)
27. C (M7)
28. D (M3)
29. D (M4)
30. B (M5)
31. C (M7)
32. C (M10)
33. A (M10)
34. A (M5)
35. C (M5)
36. A (M9)
37. C (M9)
38. C (M4)
39. B (M4)
40. C (M9)

Practice Final Exam #2

41. C (M1)
42. A (M9)
43. B (M5)
44. D (M5)
45. A (M5)
46. A (M3)
47. B (M5)
48. B (M4)
49. B (M5)
50. C (M5)
51. A (M3)
52. B (M5)
53. A (M5)
54. C (M2)
55. B (M7)
56. C (M4)
57. D (M1)
58. A (M5)
59. C (M5)
60. C (M6)
61. D (M6)
62. D (M1 and 7)
63. A (M6)
64. C (M10)
65. A (M4)
66. C (M9)
67. A (M6)
68. D (M7)
69. C (M6)
70. A (M7)
71. B (M10)
72. B (M10)
73. B (M7)
74. D (M7)
75. A (M7)
76. B (M8)
77. B (M6)
78. B (M8)
79. D (M9)
80. B (M9)

Practice Final Exam #3

81. C (M9)
82. C (M1)
83. A (M9)
84. D (M1)
85. B (M5)
86. D (M9)
87. C (M1)
88. D (M4)
89. C (M7)
90. A (M4)
91. C (M4)
92. D (M3)
93. A (M3)
94. C (M7)
95. B (M6)
96. D (M6)
97. D (M10)
98. B (M10)
99. D (M3)
100. A (M4)
101. A (M10)
102. C (M5)
103. A (M8)
104. B (M5)
105. A (M4)
106. C (M4)
107. D (M4)
108. A (M7)
109. B (M7)
110. B (M5)
111. C (M4)
112. C (M4)
113. B (M4)
114. C (M8)
115. D (M2)
116. B (M8)
117. A (M5)
118. D (M8)
119. A (M1)
120. A (M4)

Math 0989 Final Exam Review Packet

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- Module #2: 4, 54, 115
- Module #3: 5, 6, 7, 28, 46, 51, 92, 93, 99
- Module #4: 8, 10, 11, 17, 21, 23, 29, 38, 39, 48, 56, 65, 88, 90, 91, 100, 105, 106, 107, 111, 112, 113, 120
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- Module #10: 25, 32, 33, 64, 71, 72, 97, 98, 101