M101 Review for Final Exam

Revised Spring 2012

1) Solve $-8x + 5 = 50$

2) Solve $\frac{x}{4} = \frac{7}{3}$

3) Solve $-2.4x = 72$

4) Solve $21 = 5 - 12x$

5) Solve $7 - 3x = 8x + 4$

6) Solve $-4n + 7 = 6n + 7n + 2 + 4n - 5$

7) Solve $6 - 2(5x - 1) = 4x + 20$

8) Solve $10 - 4(2x + 1) - (3x - 4) = -9x + 4 - 4x$

9) Solve $\frac{3}{4}x + \frac{2}{3} = \frac{1}{6}$

10) Solve $\frac{1}{3}x + \frac{1}{4}(x - 3) = \frac{7}{4}$

11) Solve $\frac{1}{2}(20 - 3x) = \frac{1}{3}(14 + x) - 2$

12) A number increased by 2 is 5 less than twice the number. Find the number.

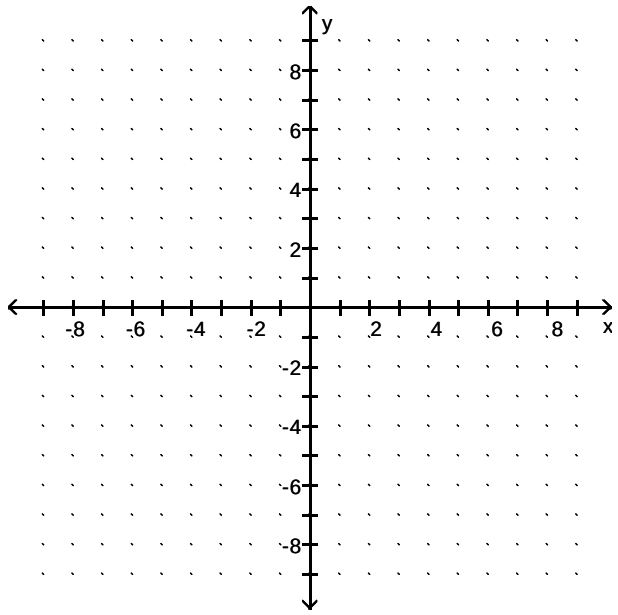
13) The formula for the volume of a cone is $V = \frac{1}{3}\pi r^2 h$. Find h if $V = 88\ in^3$ and $r = 3\ in$. Leave in terms of π.

14) The sum of one-half of a number and

18) 1 1 Solve the 1

34) 1 1 Mary has money invested in two accounts. One account pays 8% 1

44) Given the following point and slope, find the coordinates of three other points on the line. $(-14, 1)$ $m = \frac{2}{3}$.



45) Given $12x + 3y = 15$ Solve for y and determine the slope and y-intercept.

46) Find the coordinates of two points on the given line, and then use those coordinates to find the slope of the line. $12x + 4y = 4$

47) Write the

55) A plumber charges $80 plus $40 for each hour of labor. Let n represents the number of hours of labor and c is the total cost.

a. Write a linear equation modeling the scenario.

b. Find the total bill if labor is 2 hours.

b. If the total bill is $240, for how many hours of labor was the customer charged?

c. Graph the equation with n along the horizontal axis and c along the vertical axis.

d. What does the c-intercept represent?

56) In a certain city, the cost of a taxi ride is computed as follows: There is a fixed charge of $2.95 as soon as you get in the taxi, to which a charge of $1.65 per mile is added. Find a linear equation that can be used to determine the cost, y, of an x-mile taxi ride, and use this equation to find the cost of a 1

63) 1

68) If we neglect air resistance, the polynomial $-16t^2 + h_0$ describes the height of a falling object after falling from an initial height h_0 for t seconds. A cliff is 100

85) $\frac{-60a^{4}b^{3}}{-15a^{2}b^{7}}$

86) $\frac{-20a^{4}b^{2}+36a^{3}b-12ab^{5}}{-4ab^{2}}$

87) $\left(-4a^{3}b^{-2}\right)^{2}$

88) $\left(\frac{x^{-4}}{x^{2}}\right)^{5}$

89) $\frac{4xy^{-2}z^{2}}{x^{-3}y^{3}z^{-1}}$

Answer Key
Testname: M101 FINAL REVIEW

1) -58

2) $x = -\frac{28}{3}$

3) $x = -30$

4) $x = -\frac{13}{6}$

5) $x = 1$

6) $n = \frac{14}{9}$

7) $x = -2$

8) $x = -3$

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

10) $x = 12$

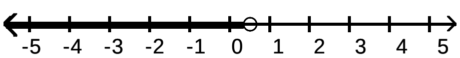
11) $x = 4$

12) $x = 7$

13) $h = \frac{88}{3}$ in

14) 60

15) $a < \frac{1}{2}$



16) $x \ge \frac{2}{5}$ $\quad [\frac{2}{5}, \infty)$

17) $x \ge -\frac{30}{7}$ $\quad [-\frac{30}{7}, \infty)$

18) $x > 300$ $\quad (300, \infty)$

19) $x \le 31$ $\quad (-\infty, 31]$

20) $x \ge 18.5$

21) 144

22) 300

23) 18%

24) a. $28.80 b. $43.20

25) $805.60

26) 4, 12

27) 11°, 79°

28) N = 5, D = 7, Q = 15

29) N = 15, Q 1

10 .27 T3 1 Tf.6A15 6c31>Tj /TT4 1 Tf .0 Tc(=)15 6c31>Tj /TT4 1 Tf .25 (=)15 6c31>Tj /TT4 M .11.94 cm 420591byj

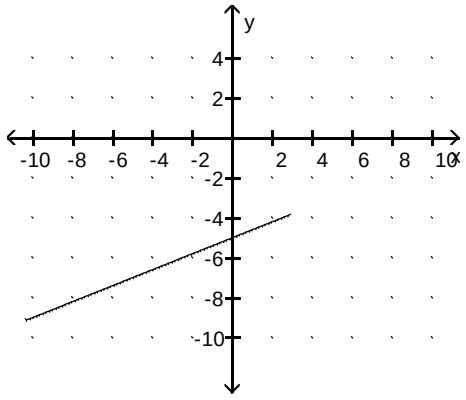
38) $\frac{3}{5}$

39) a. no slope or undefined b. $m = 0$

40) y 1

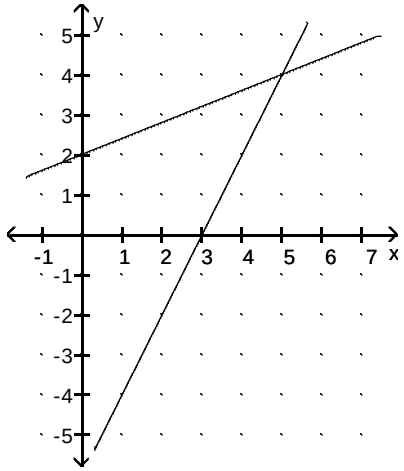
Answer Key
Testname: MATH 101 FINAL REVIEW

43) $m = \frac{2}{5}$ $b = (0, -15)$



Answer Key
Testname: M101 FINAL REVIEW

57) C(x) = 15x + 200
58) (-4,1)
59) (1,4)
60) (0,-11)
61) (3,1)
62) Infinitely many solutions
63) (5,4)



77) $x^2 + 2x + 15$

78) $8x^2 + 8x + 6$

79) $4x^3 + 16x^2 + 19x + 10$

80) $x^2 + 8x + 16$

81) $36x^2 + 60x + 25$

82) $-18x^3 + 2x$

83) $\frac{1}{x^2}$

84) p^4

85) $\frac{4a^2}{b^4}$

86) $5a^3 + \frac{9a^2}{b} + 3b^3$

87) $\frac{16a^6c^2}{b^4}$

88) $\frac{1}{x^{30}}$

89) $\frac{4x^4z^3}{y^5}$